PHILIPS 28PW850412

MODEL

SERVICE MANUAL

MC-Service

Farbfernsehen

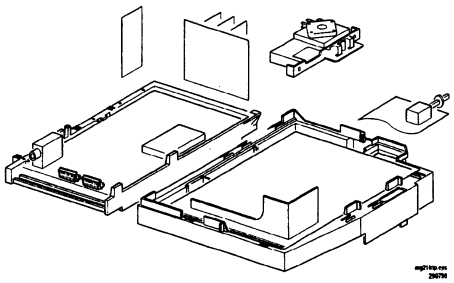
PHIL -05294

Chassis

MG2.1E

AA

Service
Service
Service



Service Manual

Published by CO 9872 TV Service Department

Subject to modification

D 4822 727 21624

PHILIPS

1 Technical specifications

- Mains voltage: 220V - 240V (± 10%); 50-60Hz (± 5%)
- Aerial input impedance: coaxial 75 Ω
- Minimal aerial voltage: 30µV (VHF), 40µV (UHF)
- Maximum aerial voltage:180 mV
- Programmes: 0-99
- VCR programmes: 0, 90-99

2 Specification connections

2.1 Front connections

TOP CONTROL FL7/FL8 STYLING

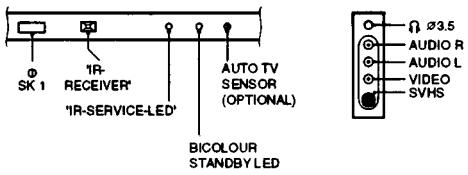


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Figure 2-1

2.1.1 Audio/Video

Video	1Vpp/75Ω	
Audio	L(0.5Vrms ≥10kΩ)	
Audio	R(0.5Vrms ≥10kΩ)	
Headphone	(32-600Ω ≥10mW)	

2.1.2 SVHS

1-		
2-		
3- Y	(1Vpp; 75Ω)	
4- C	(0.3 Vpp;75Ω)	

2.2 Rear connections

See figure 2.2

2.2.1 External 1(in/out): RGB+CVBS

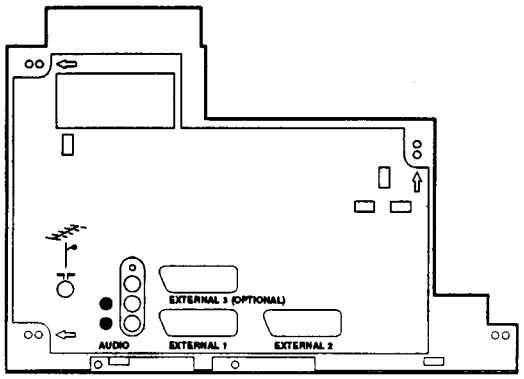

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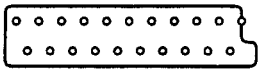
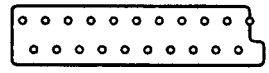
Figure 2-2



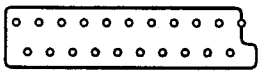
1- Audio	R (0.5Vrms ≤1kΩ)	
2- Audio	R (0.5Vrms ≥10kΩ)	
3- Audio	L (0.5Vrms ≤1kΩ)	
4- Audio		
5- Blue		
6- Audio	L (0.5Vrms ≥10kΩ)	
7- Blue	(0.7Vpp/75Ω)	
8- CVBS-status	0-1.3V:INT	
	4.5-7V:EXT 16:9	
	9.5-12V:EXT 4:3	
9- Green		
10-		
11- Green	(0.7Vpp/75Ω)	
12-		
13- Red		
14- RGB-status		
15- Red	(0.7Vpp/75Ω)	
16- RGB-status	0-0.4V:INT	
	1-3V:EXT/75Ω	
17- CVBS		
18- CVBS		
19- CVBS	(1Vpp/75Ω)	
20- CVBS	(1Vpp/75Ω)	
21- Earth socket		

2.2.2 External 2 (in/out): SVHS+RGB+CVBS (intended for VCR.)



1- Audio	R (0.5Vrms ≤1kΩ)	
2- Audio	R (0.5Vrms ≥10kΩ)	
3- Audio	L (0.5Vrms ≤1kΩ)	
4- Audio		
5- Blue		
6- Audio	L (0.5Vrms ≥10kΩ)	
7- Blue / Chroma out	(0.7Vpp/75Ω)	
8- CVBS-status	0-1.3V:INT	
	4.5-7V:EXT 16:9	
	9.5-12V:EXT 4:3	
9- Green		
10-	Easy link	
11- Green	(0.7Vpp/75Ω)	
12-		
13- Red		
14- RGB-status		
15- Red / chroma-in	(0.7Vpp/75Ω)	
16- RGB-status	(0-0.4V:INT	
	1-3V:EXT/75Ω)	
17- CVBS		
18- CVBS		
19- Y/CVBS	(1Vpp/75Ω)	
20- Y/CVBS	(1Vpp/75Ω)	
21- Earth socket		

2.2.3 External 3 (in): CVBS+Audio (optional)



1 -			
2 -	Audio	R (0.5Vrms >10kΩ)	⊕
3 -			
4 -	Audio		⊥
5 -			
6 -	Audio	L (0.5Vrms>10kΩ)	⊕
7 -			
8 -	CVBS-status	0-1.3V:INT	
		4.5-7V:EXT 16:9	
		9.5-12V:EXT 4:3	⊕
9 -			
10 -			
11 -			
12 -			
13 -			
14 -			
15 -			
16 -			
17 -	CVBS		⊥
18 -	CVBS		⊥
19 -			
20 -	CVBS	(1Vpp/75Ω)	⊕
21 -	Earth socket		

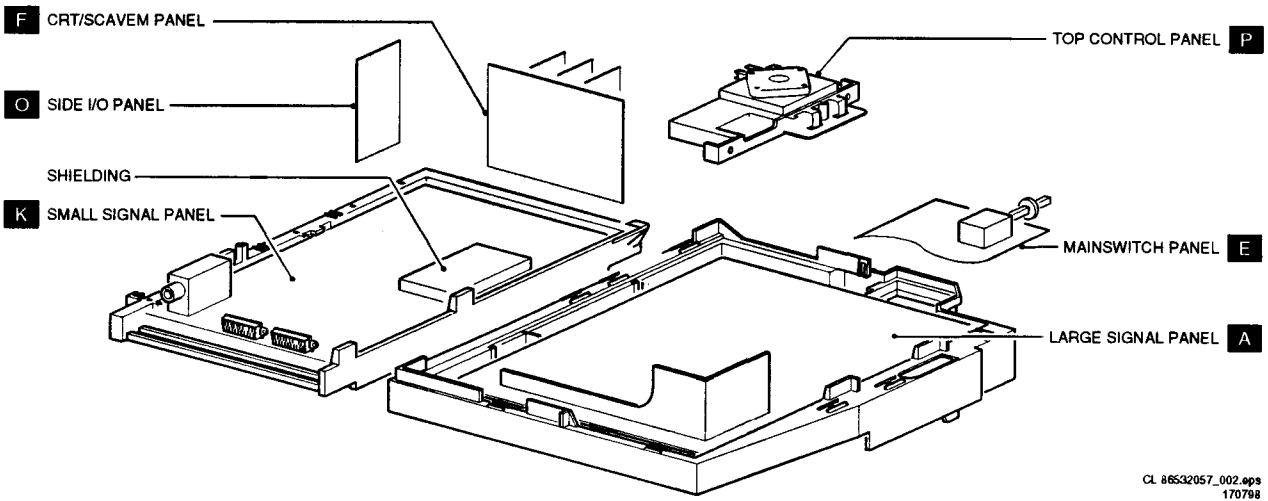


Figure 2-3

3 Safety instructions, Maintenance instruction,

3.1 Safety instructions for repairs

Safety regulations require that during a repair:
- the set should be connected to the mains via an isolating transformer;
- safety components, indicated by the symbol Δ, should be replaced by components identical to the original ones;
- when replacing the CRT, safety goggles must be worn.

2. Safety regulations require that after a repair the set must be returned in its original condition. In particular attention should be paid to the following points. h
   - As a strict precaution, we advise you to resolder the solder joints through which the horizontal deflection current is flowing, in particular: ('general repair instruction')
     - all pins of the line output transformer (LOT);
     - fly-back capacitor(s);
     - S-correction capacitor(s);
     - line output transistor;
     - pins of the connector with wires to the deflection coil;
     - other components through which the deflection current flows.

     Note:
     This resoldering is advised to prevent bad connections due to metal fatigue in solder joints and is therefore only necessary for television sets older than 2 years.

   The wire trees and EHT cable should be routed correctly and fixed with the mounted cable clamps.
   The insulation of the mains lead should be checked for external damage.
   The mains lead strain relief should be checked for its function in order to avoid touching the CRT, hot components or heat sinks.
   The electrical DC resistance between the mains plug and the secondary side should be checked (only for sets which have a mains isolated power supply). This check can be done as follows:
   - unplug the mains cord and connect a wire between the two pins of the mains plug;
   - set the mains switch to the on position (keep the mains cord unplugged!);
   - measure the resistance value between the pins of the mains plug and the metal shielding of the tuner or the aerial connection on the set. The reading should be between 4.5 MW and 12 MW;
   - switch off the TV and remove the wire between the two pins of the mains plug.

   The cabinet should be checked for defects to avoid touching of any inner parts by the customer.

3.2 Maintenance instruction

It is recommended to have a maintenance inspection carried out by a qualified service employee. The interval depends on the usage conditions:
- When the set is used under normal circumstances, for example in a living room, the recommended interval is 3 to 5 years.
- When the set is used in circumstances with higher dust, grease or moisture levels, for example in a kitchen, the recommended interval is 1 year.
- The maintenance inspection contains the following actions:
  - Execute the above mentioned 'general repair instruction'.
  - Clean the power supply and deflection circuitry on the chassis.
  - Clean the picture tube panel and the neck of the picture tube.

3.3 Warnings

1. In order to prevent damage to ICs and transistors, all high-voltage flashovers must be avoided. In order to prevent damage to the picture tube, the method shown in Fig. 3.1 should be used to discharge the picture tube. Use a high-voltage probe and a multimeter (position DC-V). Discharge until the meter reading is 0V (after approx. 30s).
2. ESD All ICs and many other semiconductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically. When repairing, make sure that you are connected with the same potential as the mass of the set by a wristband with resistance. Keep components and tools also at this same potential.
   - Available ESD protection equipment:
   - anti-static table mat (large 1200x650x1.25mm) 4822 466 10953
   - anti-static table mat (small 600x650x1.25mm) 4822 466 10958
   - anti-static wristband 4822 395 10223
   - connection box (3 press stud connections, 1 M ohm) 4822 320 11307
   - extension cable (2 m, 2 M ohm; to connect wristband to connection box) 4822 320 11305
   - connecting cable (3 m, 2 M ohm; to connect table mat to connection box) 4822 320 11306
   - earth cable (1 M ohm; to connect any product to mat or connection box) 4822 320 11308
   - complete kit ESD3 (combining all 6 prior products - small table mat) 4822 310 10671
   - wristband tester 4822 344 13999
3. Together with the deflection unit and any multipole unit, the flat square picture tubes used from an integrated unit. The deflection and the multipole units are set optimally at the factory. Adjustment of this unit during repair is therefore not recommended.
4. Be careful during measurements in the high-voltage section and on the picture tube.
5. Never replace modules or other components while the unit is switched on.
6. When making settings, use plastic rather than metal tools. This will prevent any short circuits and the danger of a circuit becoming unstable.
7. Wear safety goggles during replacement of the picture tube

3.4 Notes

1. The direct voltages and oscillograms should be measured with regard to the tuner earth (⊥), or hot earth (⊥) as this is called.
2. The direct voltages and oscillograms shown in the diagrams are indicative and should be measured in the Service Default Mode (see chapter 5) with a colour bar signal and stereo sound (L:3 kHz, R:1 kHz unless stated otherwise) and picture carrier at 475.25 MHz.
3. Where necessary, the oscillograms and direct voltages are measured with (⊥) and without aerial signal (⊥). Voltages in the power supply section are measured both for normal operation (⊥) and in standby (⊥). These values are indicated by means of the appropriate symbols.
4. The picture tube PWB has printed spark gaps. Each spark gap is connected between an electrode of the picture tube and the Aquadag coating.
5. The semiconductors indicated in the circuit diagram and in the parts lists are completely interchangeable per position with the semiconductors in the unit, irrespective of the type indication on these semiconductors.
6. Manufactured under license from Dolby Laboratories Licensing Corporation.
7. DOLBY, the double D symbol and PRO LOGIC are trademarks of Dolby Laboratories Licensing Corporation.

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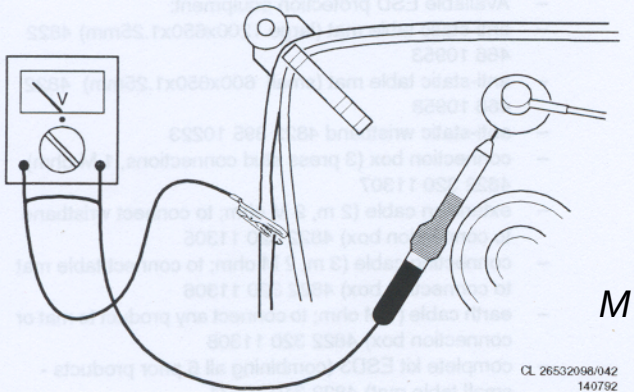

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MC-Service

4 Mechanical instructions

4.1 Removing the rear cover

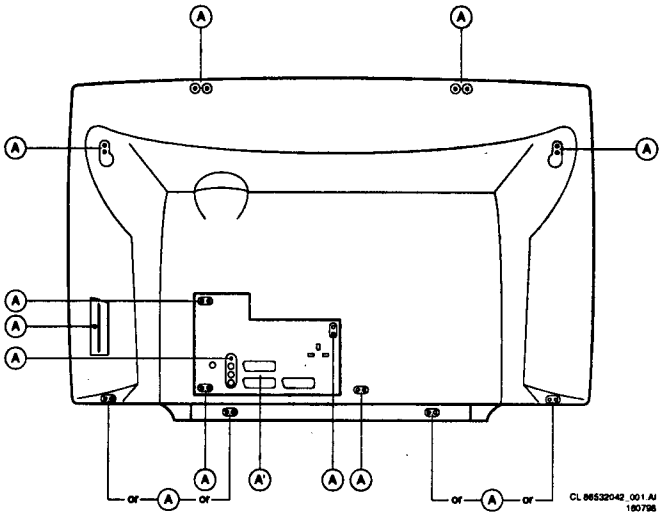

Figure 4-1

1. Remove the fixation screws (A) of the rear cover, notice also the side-I/O-screw; see figure 4.1 (A') screw only valid for 3-scart configuration.
2. Remove the rear cover.

4.2 Service positions

There are two predefined service positions

1. Service position for the top side (component-side)
2. Service position for the bottom side (only valid for LSP) (copper-side)

4.2.1 *Service position top side*

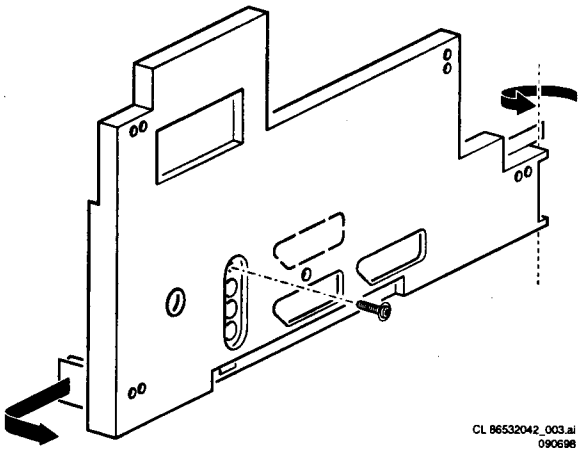

Figure 4-2

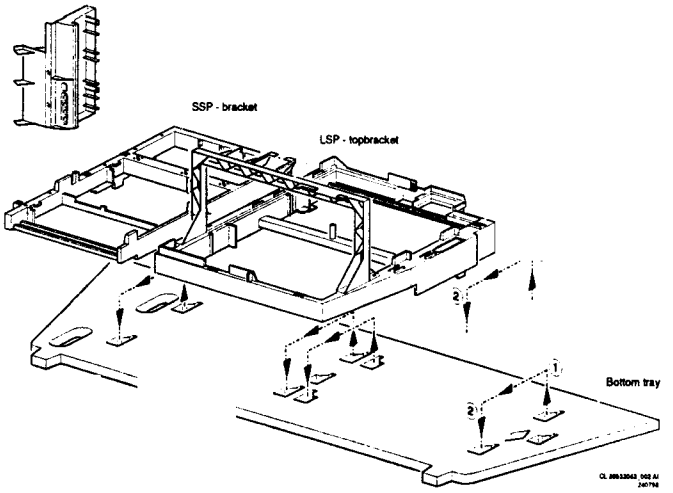

Figure 4-3

1. Remove 1 screw in case of 2-scart I/O-backplate and 2 screws in case of a 3-scart I/O-backplate. (See figure 4.2)
2. Remove I/O-backplate by releasing snap at left side. Pull to left and backwards. The I/O-bracket hinges at the right side. It can be removed now.
3. Pull backwards (about 8 cm) the bracket with the SSP and the LSP. These brackets are not fixed to each other, but can be repositioned backwards, as if they were one bracket.
4. Hook the brackets in the first row of fixation-holes of the bottom tray; see figure 4.3. In other words re-position the fixation from (1) TO (2)

4.2.2 *Service position bottom side (only for LSP)*

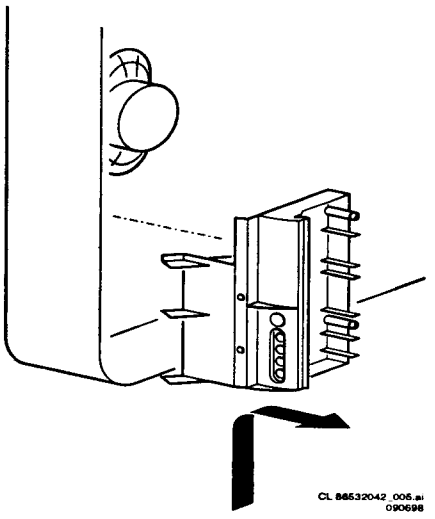

Figure 4-4

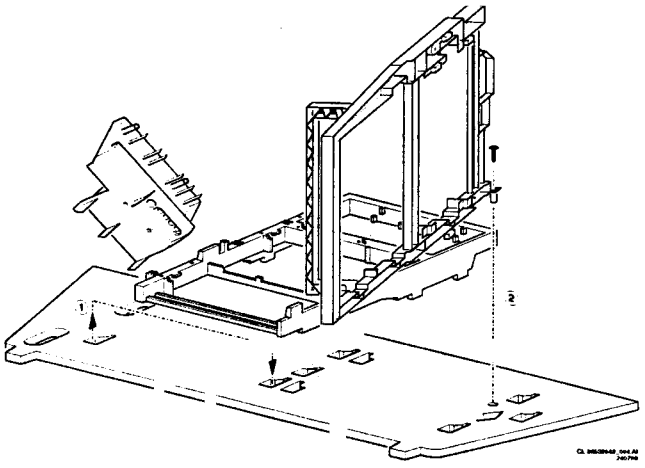

Figure 4-5

1. Referring to previous Service position one must remove the SSP and LSP from bottom tray by pulling back these two panels.
2. Disconnect the SSP from the LSP bracket
3. The two panels must be shifted some 25 cm to the right. When doing this the side-assembly can be taken out of the hinge (see figure 4.4), and placed on the bottom tray.
4. Either the LSP-topbracket must be removed first, or the cabling from SSP to LSP (0310 and O311) must be re-routed outside the LSP-topbracket to get room to position these panels
5. Turn the LSP 90 degrees anti clock wise and place the LSP in the hole of the bottom tray. If needed a screw can reinforce the stability of this position. (see figure 4.5) (See (2).
6. The left front hook of the SSP panel can be fixed in a fixation-hole, that was used in previous service-position for the right front hook of the SSP. See described movement-action (1). (there is no right fixation hole)

4.2.3 (Service position bottom side SSP)

1. In fact there is no service position for the bottom of the SSP. Almost all components are present on the component-side. All test points are located on the component-side.
2. If ICs must be replaced take the complete panel out. If still a service-position is needed take SSP out of bracket and rotate it so that one (sitting behind the set) sees the copper-side of the SSP, with Tuner pointed to the upper-side.

4.3 Removing the LSP-top bracket

1. (See figure 4.3). Remove the two fixation screws of the LSP-topbracket (one on the left hand side, one on the right hand side)
2. Disconnect wirings from cable-clamps of LSP-topbracket
3. In case the line transformer is changed by a bigger type a part of the LSP-topbracket can be removed by breaking it

4.4 Removing the SSP from SSP-bracket

1. Release the three fixation clamps on the right hand side of the bracket
2. Press the board upwards and remove the board from the bracket

4.5 Removing the LSP from LSP-bracket

1. Release the two fixation clamps on the right hand side of the bracket
2. Press the board upwards and remove the board from the bracket

4.6 Removing the top control board

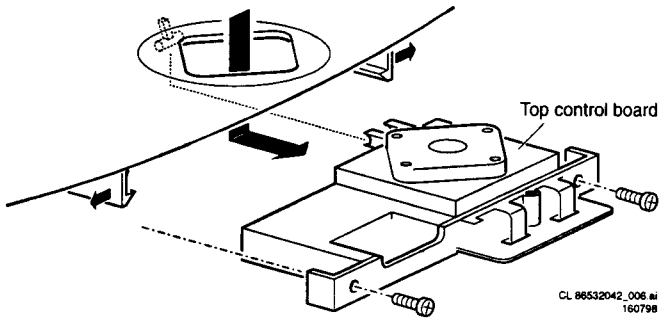

Figure 4-6

1. See figure 4.6. Pull 2 clamps to the outer side
2. Top control board can be pushed down now, while it hinges still in the front
3. Now the board can be pulled backwards
4. (If by accident the hinge in front is damaged or one of the clamps is broken, the top control board can also be fixed by 2 screws)

4.7 Removing the side I/O board

1. The complete Side I/O-assembly can be lifted out of the hinges and placed on the bottom tray of the set. (see fig 4.3)
2. The pcb can easily be removed out of the bracket by releasing the fixation clamps

4.8 Removing the mains switch/LED board

1. Release the two fixation clamps
2. Pull the board backwards

4.9 Mounting the rear cover

Before mounting the rear cover, check whether the mains cord is mounted correctly in the guiding brackets

5 Service modes, error codes and protections

In this chapter the following paragraphs are included:
5.1 Test points
5.2 Service modes, Dealer Service Tool and Compair (including fault finding tips related to CSM-mode)
5.3 Error codes
5.4 Protections
5.5 Fault find tree

5.1 Test points

The MG2.1E chassis is equipped with test points in the service printing. These test points are referring to the functional blocks:

P1-P2-P3, etc: Test points for the power supply
L1-L2-L3, etc: Test points for the line drive and line output circuitry
F1-F2-F3, etc on Small Signal Panel: Test points for the frame drive
F1-F2-F3, etc. on CRT/Scavem Panel: Test points for the CRT-panel circuitry
F1-F2-F3, etc. on Large Small Signal Panel: Test points for the frame output circuitry,
S1-S2-S3, etc: Test points for the synchronisation circuitry
V1-V2-V3, etc: Test points for the video processing circuitry
I1-I2-I3, etc: Test points for the Tuner/IF part
A1-A2-A3, etc. on Small Signal Panel: Test points for the audio processing circuitry
A1-A2-A3, etc. on Large Signal Panel: Test points for the audio amplifiers
C1-C2-C3, etc: Test points for the control circuitry
T1-T2-T3, etc: Testpoints for the teletext circuitry
SC1-SC2-SC3, etc: Test points for the Scavem circuitry

The numbering is done in a for diagnostics logical sequence; always start diagnosing within a functional block in the sequence of the relevant test points for that functional block.

5.2 Service modes, Dealer Service Tool and ComPair

For easy installation and diagnosis the dealer remote control RC7150 is introduced. The RC7150 can be used for all new TV sets, including all set of the MG2.1E chassis. The RC7150 is also called Dealer Service Tool or DST. The ordering number of the DST (RC7150) is 4822 218 21232.

Installation features for the dealer

The dealer can use the RC7150 for programming the TV-set with presets.

10 Different program tables can be programmed into the DST via a TV-set (downloading from the GFL , MD2 or MG2.1 to the DST; see GFL, MD2 and MG2.1 service manuals) or by the DST-I (DST interface; ordering code 4822 218 21277).

For explanation of the installation features of the DST, the directions for use of the DST (4822 727 20073) are recommended (For the MG2.1E chassis, download code 4 should be used).

Diagnose features for the servicer

The MG2.1E sets can be put in the two service modes via the DST RC7150. These are the Service Default Mode (SDM) and the Service Alignment Mode (SAM).

The SDM and SAM can also be entered by short circuiting the relevant pins on the SSP.

Service Default Mode (SDM)
Specification of the SDM:

- Tuning frequency 475.25 MHz
- TV-system for BGLM set to BG, for BGLL'I sets to LL'
- All picture settings at 50% (brightness, colour, contrast, HUE)
- All sound settings at 50% except volume at 25% (so bass, treble, balance at 50%, volume at 25%)
- All service-unfriendly modes are disabled (like sleep timer, child lock, blue mute)

Entering the SDM can be done in 2 ways:

- By the "DEFAULT" key on the DST while the set is in the normal operation mode.
- By shortcircuiting for a moment the two pins (pin 2 and 3 of connector 0356) on the component side of the SSP with the indication "SDM" (activation can be performed in all modes except when the set has a problem with the main-processor).

Note: If the SDM is entered via the pins, all the protections are de-activated.

Exiting the SDM can only be done via the STANDBY command. By switching off-on the set with the mains switch the MG2.1E will come up again in the SDM.

Service Alignment Mode (SAM)
Specification of the SAM:

- Software alignments (see chapter 8)
- Option settings (see chapter 8)
- Error buffer reading and erasing. The most recent error code is displayed on the left side.
- Operation counter
- Software version

Entering the SAM can be done in 2 ways:

- By the > button on the DST while the set is in the normal operation mode (or SDM). Enter the password '3-1-4-0' and press OK.
- By shortcircuiting for a moment the two pins (pin 1 and 2 of connector 0356) on the component side of the SSP with the indication "SAM" (activation can be performed in all modes except when the set has a problem with the microprocessor).

Note: If the SAM is entered via the pins, all protections are de-activated.

Exiting the SAM can be done via the MENU command or via switching off-on the set with the mains switch.

Customer Service Mode (CSM)
All MG2.1E sets are equipped with the 'Customer Service Mode' (CSM). This 'Customer Service Mode' (CSM) is a special service mode which can be activated and deactivated by the customer upon request of the service technician/dealer during a telephone conversation in order to identify the status of the set. This CSM is a 'read only' mode, therefore modifications in this mode are not possible.

Switching-on of the Customer Service Mode
The Customer Service Mode will switch-on after pressing simultaneously the "MUTE" knob on the remote control handset and the "MENU" button on the TV for at least 4

seconds. This activation only works if there is no menu on the screen.

Switching-off the Customer Service Mode
The Customer Service Mode will switch-off after pressing any key of the remote control handset (with exception of the 'cursor-up' and 'cursor-down' keys, or the buttons on the TV or by switching off the TV set with the mains switch.

Detailed explanation of the Customer service Mode
After switching on the Customer Service Menu the following screen will appear:

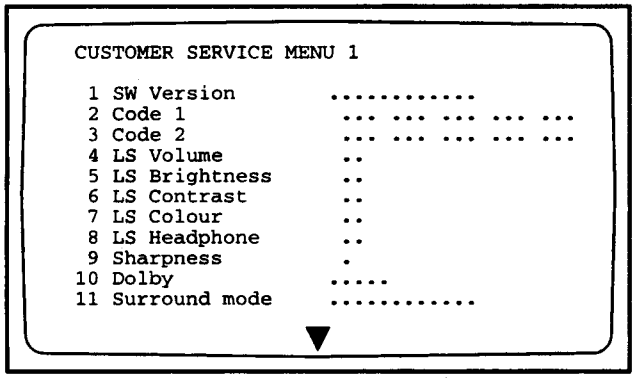
CUSTOMER SERVICE MENU 1
1 SW Version .....
2 Code 1 ... ...
3 Code 2 ... ...
4 LS Volume ..
5 LS Brightness ..
6 LS Contrast ..
7 LS Colour ..
8 LS Headphone ..
9 Sharpness .
10 Dolby .....
11 Surround mode .....

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Figure 5-1 Customer Service Menu 1

Line 1: Software version; the build in software version AAAA= MG21(chassis name) B = E (Europe) C = 1 (language cluster) X = main version number Y = sub version number Details on the software version can be found in the chapter "Software Survey" of the publication "Product Survey - Colour Television".

Line 2: Code 1; gives the last 5 errors of the error buffer. As soon as the built-in diagnose software has detected an error the buffer is adapted.

Line 3: Code 2; gives the first 5 errors of the error buffer. As soon as the built-in diagnose software has detected an error the buffer is adapted. The last occured error is displayed on the leftmost position of code 2. Each error code is displayed as a 3 digit number. When less than 10 errors occur, the rest of the line(s) is(are) empty. In case of no errors the text "No Errors" is displayed. See paragraph 5.3 of this chapter for a description of the error codes.

Line 4: LS Volume; gives the Last Status of the volume as set by the customer for this selected transmitter. Volume values can be changed via the volume key on the remote control handset.

Line 5: LS Brightness; gives the Last Status of the brightness as set by the customer for this selected transmitter. Brightness values can be changed via the 'cursor left' and 'cursor right' keys on the remote control handset after pressing the red button for picture menu and selecting "brightness".

Line 6: LS Contrast; gives the Last Status of the contrast as set by the customer. The value can vary from 0 (contrast is minimum) to 63 (contrast is maximum). Contrast values can be changed via the 'cursor left' and 'cursor right' keys on the remote control handset after pressing the red button for picture menu and selecting "contrast".

Line 7: LS Colour; gives the Last Status of the colour saturation, as set by the customer. The value can vary from 0 (colour is minimum) to 63 (colour is maximum). Colour values can be changed via the 'cursor left' and 'cursor right' keys on the remote control handset after pressing the red button for picture menu and selecting "colour".

Line 8: LS Headphone; gives the Last Status of the headphone volume, as set by the customer. The value can vary from 0 (volume is minimum) to 63 (volume is maximum). Headphone volume values can be changed via the 'cursor left' and 'cursor right' keys on the remote control handset after pressing the green button for sound menu and selecting "headphone".

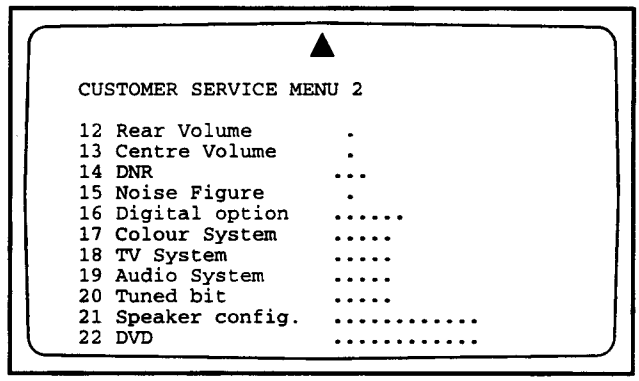
Line 9: Sharpness; gives the sharpness value. The value can vary from 0 (sharpness is minimum) to 4 (sharpness is maximum). In case of bad antenna signals a too high value of the sharpness can result in a noisy picture. Sharpness values can be changed via the 'cursor left' and 'cursor right' keys on the remote control handset after pressing the red button for picture menu and selecting "sharpness".

Line 10: Dolby; indicates whether the received transmitter transmits Dolby sound (present) or not (not present). Attention: The presence of Dolby can only be tested by the software on the Dolby Signalling bit. If a Dolby transmission is therefore received without a Dolby Signalling bit, then this indicator will show "not present" even though such a Dolby transmission is received.

Line 11: Surround Mode; indicates the by the customer selected surround mode. In case the set is a Non-dolby set there will be displayed "0". If it is a Dolby-set then is displayed: "Pro Logic", "Dolby 3 Stereo", "Hall" or "Off". For Dolby-set surround mode can be changed via the 'cursor left' and 'cursor right' keys on the remote control handset after pressing the green button for sound menu and selecting "Surround settings".

By means of the 'cursor-down' knob on the remote control handset the Customer Service Menu 2 will appear. By means of the 'cursor-up' knob on the remote control handset the Customer Service Menu 1 will appear again.

Customer Service Menu 2 represents following information:



86532061_005.AI
230798

Figure 5-2 Customer Service Menu 2

Line 12: Rear Volume; gives the volume value of the surround sound loudspeakers. This value can vary from 0 (minimum volume) to 63 (maximum volume). Rear volume can be changed via the 'cursor left' and 'cursor right' keys on the remote control handset after pressing the green button for sound menu, selecting "Surround settings" and selecting "Rear volume". This feature is only available when surround mode is in "Dolby Pro Logic" or "Hall".

MC-Service

Line 13: Centre Volume; gives the volume value of the centre loudspeakers. This value can vary from 0 (minimum volume) to 63 (maximum volume). Centre volume can be changed via the 'cursor left' and 'cursor right' keys on the remote control handset after pressing the green button for sound menu, selecting 'Dolby Pro Logic' and selecting "centre volume". This feature is only available when surround mode is in "Dolby Pro Logic" or "Dolby 3 Stereo".

Line 14: DNR (Dynamic Noise Reduction); gives the setting of the DNR for the selected transmitter. The following selections are possible:

"off", "min", "med" or "max"
"off" or "automatic" (MG2.1E with "Automatic Noise Reduction").

The DNR can be changed via the "DNR" key on the remote control handset.

Line 15: Noise Figure; gives the selected noise ratio for this selected transmitter. This value can vary from 0-2 (good signal) to 4-5 (average signal) and to 7 or higher (bad signal). This only works in case the DNR selection is "off/automatic".

Line 16: Digital Option; gives the selected digital mode, "100Hz", Digital Scan" or "Natural Motion". Digital option can be changed via the 'cursor left' and 'cursor right' keys on the remote control handset after pressing the red button for picture menu and selecting "digital options".

Line 17: Colour System; gives information about the colour system of the selected transmitter.

Black and white:no colour carrier received
PAL:PAL signal received
SECAM:SECAM signal received
NTSC:NTSC signal received

Line 18: TV System; gives information about the video system of the selected transmitter.

- BG:BG signal received
- DK:DK signal received
- I:PAL I signal received
- L:SECAM L signals received
- M38.9:NTSC M signal received with video carrier on 38.9 MHz
- MN:NTSC M signal received

Line 19: Audio System; gives information about the audio system of the selected transmitter.

- Sound Muted:No sound
- Dolby Pro Logic:Dolby Pro Logic sound received
- Mono:Mono sound received
- Stereo:Stereo sound received
- Dual I:Language I received
- Dual II:Language II received
- Digital Mono:Digital mono sound is received
- Digital Stereo:Digital stereo sound is received
- Digital Dual I:Digital language I is received
- Digital Dual II:Digital language II is received

Line 20: Tuned Bit; gives information about the tuning method of the stored preset. If the value is "Yes" the preset is stored via manual entry of the frequency when a transmitter was not present on that frequency. In that case the TV will attempt to perform a micro-search every time the preset number is selected. Once the micro-search has been successful the Tuned Bit will be set to "No".

Line 21: Speaker configuration; gives the configuration setting for the speakers.

In case the set is a Non-dolby set there will be displayed "0". If it is a Dolby-set then is displayed:

"Full internal", "L/R external", "Surround external" or "Full external". For the Dolby-set the speaker configuration can be changed via the 'cursor left' and 'cursor right' keys on the remote control handset after opening the installation menu and selecting "set up". The installation menu can be opened by pressing 'timer' and 'enlarge' at the same time. This feature is only available when the set has virtual Dolby.

Line 22: DVD; gives the configuration setting for DVD. This can be "Present" or "Not Present". If "Present" is selected the starting point is a top quality signal and a number of settings are therefore changed automatically. DVD can be changed via the 'cursor left' and 'cursor right' keys on the remote control handset after opening the installation menu and selecting "set up". The installation menu can be opened by pressing 'timer' and 'enlarge' at the same time.

Problems and solving tips
The procedures to change the value or the status of the different settings is described in the paragraph 'Detailed explanation of the Customer Service Mode'

Picture problems
Worse picture quality in case of DVD pictures Check line 22 "DVD". In case line 22 gives the indication "Not Present" change the setting into "Present".

Snowy/noisy picture

1. Check line 15 "Noise Figure". In case the value is 7 or higher and the value is also high on other programs check the aerial cable / aerial system.
2. Check lines 9 "Sharpness", 14 "DNR" and 15 "Noise Figure". In case the value of line 9 is 3 or 4 and the value of line 15 is high (7 or higher), lower the value of line 9 "sharpness" and switch DNR (line 14) to "automatic", "on" or to a higher value.

Picture too dark

1. Press "Smart Picture" button on the Remote Control handset. In case picture improves, raise the brightness value or raise the contrast value. The new value(s) are automatically stored for all TV channels.
2. After switching on the Customer Service Mode the picture is OK. Raise the brightness value or raise the contrast value. The new value(s) are automatically stored for all TV channels.
3. Check lines 6 "PP Brightness" and 7 "PP Contrast". The value of line 6 is low (<10) or the value of line 7 is low (<10). Raise the brightness value or raise the contrast value.

Picture too bright

1. Press "Smart Picture" button on the Remote Control handset. In case picture improves, reduce the brightness value or reduce the contrast value. The new value(s) are automatically stored for all TV channels.
2. After switching on the Customer service Mode the picture is OK. Reduce the brightness value or reduce the contrast value. The new value(s) are automatically stored for all TV channels.
3. Check lines 6 "PP Brightness" and 7 "PP Contrast". The value of line 6 is high(>40) or the value of line 7 is high >50). Reduce the brightness value or raise the contrast value.

Fading picture

Digital scan effect. Check line 14 "DNR". The status of "DNR" is 'med' or 'max'. Reduce "DNR" to 'min' or switch off the digital scan.

White line around picture elements and text

1. Press "Smart Picture" button on the Remote Control handset. In case picture improves, reduce the sharpness value. The new value(s) are automatically stored for all TV channels.
2. After switching on the Customer service Mode the picture is OK. Reduce the sharpness value. The new value(s) are automatically stored for all TV channels.
3. Check lines Check line 8 "Sharpness". Reduce the sharpness value. The new value(s) are automatically stored for all TV channels

No picture Check line 20 "Tuned bit". In case the value is 'Yes', install the required program again. Open the installation menu by pressing 'timer' and 'enlarge' at the same time and perform manual installation.

Blue picture No proper signal is received. Check the aerial cable/aerial system.

Blue picture and/or unstable picture A scrambled or decoded signal is received

Black and white picture Check line 5 "PP colour" In case the value is low (<10) raise the value of colour. The new value(s) are automatically stored for all TV channels.

No colours/colour lines around picture elements

1. Check lines 17 "Colour System" and 18 "TV System". In case line 17 is 'PAL' and line 18 is 'M 38,9', the installed system for this preset is 'USA', while 'West Europe' is required. Install the required program again. Open the installation menu by pressing 'timer' and 'enlarge' at the same time and perform manual installation. Select 'System; West Europe'.
2. In case line 17 is 'PAL' and line 18 is 'L', the installed system for this preset is 'France', while 'West Europe' is required. Install the required program again. Open the installation menu by pressing 'timer' and 'enlarge' at the same time and perform manual installation. Select 'System; West Europe'

No colours/noise in picture

1. Check lines 17 "Colour System" and 18 "TV System". In case line 17 is 'Black and White' and line 18 is 'BG', the installed system for this preset is 'West Europe', while 'USA' is required. Install the required program again. Open the installation menu by pressing 'timer' and 'enlarge' at the same time and perform manual installation. Select 'System; USA'.
2. In case line 17 is 'Black and White' and line 18 is 'L', the installed system for this preset is 'France', while 'USA' is required. Install the required program again. Open the installation menu by pressing 'timer' and 'enlarge' at the same time and perform manual installation. Select 'System; USA'

Colours not correct Check lines 17 "Colour System" and 18 "TV System". In case line 17 is 'PAL' and line 18 is 'L', the installed system for this preset is 'France', while 'West Europe' is required. Install the required program again. Open the installation menu by pressing 'timer' and 'enlarge' at the same time and perform manual installation. Select 'System; West Europe'.

Colours not correct/unstable picture Check lines 17 "Colour System" and 18 "TV System". In case line 17 is 'SECAM' and line 18 is 'BG', the installed system for this preset is 'USA', while 'France' is required. Install the required program again. Open the installation menu by pressing 'timer' and 'enlarge' at the same time and perform manual installation. Select 'System; France'.

Unstable picture Check lines 17 "Colour System" and 18 "TV System". In case line 17 is 'SECAM' and line 18 is 'M 38,9', the installed system for this preset is 'West Europe', while 'France' is required. Install the required program again. Open the installation menu by pressing 'timer' and 'enlarge' at the same time and perform manual installation. Select 'System; France'.

Menu text not sharp enough

1. Press "Smart Picture" button on the Remote Control handset. In case picture improves, reduce the contrast value. The new value(s) are automatically stored for all TV channels.
2. After switching on the Customer Service Mode the picture is OK. Reduce the contrast value The new value(s) are automatically stored for all TV channels.
3. Check line 7 "PP Contrast". The value of line 7 is high (>50). Reduce the contrast value.

Sound problems

No sound from left and right speaker

1. Press "Smart Sound" button on the Remote Control handset. In case sound improves, raise the volume value. The new value(s) are automatically stored for all TV channels.
2. After switching on the Customer Service Mode the volume is OK. Raise the volume value. The new value(s) are automatically stored for all TV channels.
3. Check line 4 "PP Volume". The value is low. Raise the value of "PP Volume". The new value(s) are automatically stored for all TV channels.

Sound too loud for left and right speaker

1. Press "Smart Sound" button on the Remote Control handset. In case sound improves, reduce the volume value. The new value(s) are automatically stored for all TV channels.
2. After switching on the Customer Service Mode the volume is OK. Reduce the volume value. The new value(s) are automatically stored for all TV channels.
3. Check line 4 "PP Volume". The value is high. Reduce the value of "PP Volume". The new value(s) are automatically stored for all TV channels.

No sound from "centre" speaker Check line 12 "Centre Volume" The value is low. Raise the value of the "Centre Volume"

Sound too loud from "centre" speaker Check line 12 "Centre Volume" The value is high. Reduce the value of the "Centre Volume"

Diagnose Mode (only active during transmission of error codes and diagnose 99)

This mode is activated by the DIAGNOSE command on the DST for reading the error codes and erasing the error buffer by the DST even when the set is in protection and so there is no picture (assuming that the power supply and the control part are working). For activation see paragraph 5.3. The diagnose Mode is only a temporarily mode (the set will go back to the previous mode), and can not be switched on permanently.

Note: The diagnose mode can not be entered if the SAM is activated.

Compair
Compair (Computer Aided Repair) is a service tool for Philips Consumer Electronics products. Compair is a further development on the DST service remote control allowing faster and more accurate diagnostics. Compair has three big advantages:

Compair helps you to quickly get an understanding how to repair the MG2.1E in short time by guiding you step by step through the repair procedures
Compair allows very detailed diagnostics (on I^2C level) and is therefore capable of accurately indicating problem areas. You do not have to know anything about I^2C commands yourself; Compair takes care of this
Compair speeds up the repair time since it can automatically communicate with the MG2.1E (when the micro processor is working) and all repair information is directly available. When Compair is installed together with the SearchMan MG2.1E electronic manual, schematics and PCBs are only a mouse-click away

Compair consists of a Windows based fault finding program and an interface box between PC and the (defective) product. The Compair interface box is connected to the PC via a serial or RS232 cable. In case of the MG2.1E chassis, the Compair interface box and the television communicate with each other via bi-directional infrared signal.

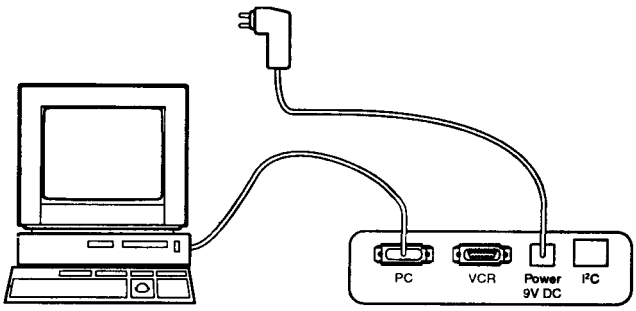


Figure 5-3

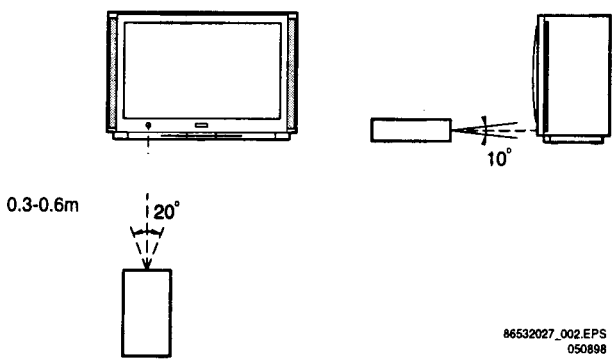


Figure 5-4

The Compair fault finding program is able to determine the problem of the defective television. Compair can gather diagnostic information in 2 ways:

1. communication to the television (automatic)
2. asking questions to you (manually)

Compair combines this information with the repair information in its database to find out how to repair the MG2.1E.

Automatic information gathering
Step-by-step start up Under normal circumstances, a fault in the power supply or an error during start-up will switch the television to protection-mode. Compair can take over the initialisation of the television. In this way it is possible to distinguish which part of the start-up routine (hence which circuitry) is causing the problem.

Reading out the error buffer Compair can automatically read out the contents of the entire error buffer.

Diagnosis on I^2C level. Compair can access the I^2C bus of the televsion without a physical connection. Compair can send and receive infrared commands to the micro controller of the television. These commands are translated by the controller to I^2C commands and vice versa. In this way it is possible for Compair to communicate (read and write) to devices on the I^2C busses of the MG2.1E.

Manual information gathering
Automatic diagnosis is only possible if the micro controller of the television is working correctly and only to a certain extend. When this is not the case, Compair will guide you through the fault finding tree by asking you questions and showing you examples. You can answer by clicking on a link (e.g. text or an oscillogram) that will bring you to the next step in the fault findig process.

A question could be: Do you see snow? (Click on the correct answer)

YES / NO

An example can be: Measure testpoint I7 and click on the correct oscillogram you see on the oscilloscope

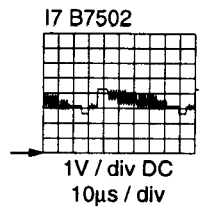


Figure 5-5

By a combination of automatic diagnostics and an interactive question/answer procedure, Compair will enable you to find most problems in a fast and effective way.

Additional features
Beside fault finding, Compair provides some additional features like:

Uploading / downloading of presets
Managing of preset lists
Emulation of the Dealer Service Tool

SearchMan (electronic service manual)
When Compair is installed in combination with SearchMan, all schematics and PCBs will be directly available while you repair a television if you click on a PCB or schematic link:

Example: Measure the DC voltage on C2568 (PCB / schematic) on the small signal level..

Clicking on PCB will automatically pop-up a picture of the PCB with the location of C2568 marked. Clicking on schematic will automatically pop-up the schematic with the location of C2568 marked.

5.3 Error codes

5.3.1 *Reading error codes from the error buffer*

The error buffer can be read in 2 ways:

1. On the screen via the Service Alignment Mode (SAM) In case picture is OK, the error buffer can be read the easiest via the SAM. In the main menu of the SAM the last 10 different error codes occurred are displayed. The most recent detected error code is displayed on the left side, so e.g.: 0 0 0 0 0means no error codes present in the buffer 3 0 0 0 0means one error code present in the buffer; error code 3 2 3 0 0 0 means two error codes present in the buffer; error code 2 is the most recent, error code 3 is detected before 2
2. On the display of the DST If an error has been detected by the MG2.1E chassis, the set might go into protection. Without the presence of a picture the errors can be read by the DST, as long as the main-processor is still active (green LED continuous and red LED blinking fast (5Hz); in case of red LED is blinking slow (1,25Hz) there is a main-processor problem). To transmit the errors from the TV to the DST:
   1. Press the "DIAGNOSE" key (in all modes except the SAM)
   2. Press "1" to view the last error detected.
   3. Hold the DST 5 to 10 cm from in front of the stand-by LED of the set (the IR-sending LED of MG2.1E is located near the stand-by LED).
   4. Press the "OK" key.

The error is represented by a 2 digit number. The 2 digits on the DST are displayed sequentially, with a pause before it is repeated. The digit after the pause is the 1st digit. If the display reads 4 - 7, the error code is 47. To read other error codes, press "DIAGNOSE" and one of the other digit keys. Note:

- If the DST cannot communicate to the MG2.1E in a proper way, ERROR 2 is shown in the display of the DST. Trying again by changing the DST position a little bit might often help.
- If the error buffer of MG2.1E is empty, no errors are displayed by the DST; the display remains blank.

5.3.2 *Clearing the error buffer*

The error buffer can be cleared in 2 ways:

1. In the SAM by selecting the item RESET ERROR BUFFER in the main menu.
2. By the "DIAGNOSE 99" command of the DST (in all modes except the SAM). Press the DIAGNOSE key on the DST, followed by 9 and 9 and then >.

5.3.3 *Error code table*

Table 5-1 Error messages

Error	Device	Description	item	Diagram	Defective module indication
1	ST24E16	Non volatile memory	IC7008	K7	Control
2	ST24E32 or M24C32	Non volatile memory	IC7008	K7	
3	SAA5800	OTC2.5 microprocessor/TXT	IC7003	K7	
5	UV1316	Tuner	U1102	K1	Tuner
15	TDA9320H	HIP I/O-video processing	IC7501	K1	Chroma IF IO
20	TDA9330H	HOP video control/deflection processor	IC7300	K6	Video Controller
25	MSP3410D	ITT sound processor	IC7751	K3	Audio module
26	SAA7712H	SEDSP dolby processor	IC7770	K4	
50	SAA4978H	Picnic	IC7609	K5	Feature Box
51	SAA4990H	Prozonic	IC7608	K5	
65	Slow I^2C		fig 5.7		Slow I^2C
66	Fast I^2C		fig 5.7		Fast I^2C
67	Supply 5V	5V2	fig 5.6		+5 V Supply
68	Supply 8V	8V6	fig 5.8		+8V Supply
20	V fail protection	VFB	fig 5.9	A3/A2/K6	Vertical Flyback
71	H fail protection	HFB	fig 5.9	A2/K6	Horizontal Flyback
73	Line Deflection protection	LDP	IC7484	A2/K6	Line Deflection
74	Beam Current Protection	BC-PROT	TS7351	K6/K7	Beam Current
76	DC Sound protection	DC-PROT	TS7762	A4/A1	Sound Output
77	Feature box protection	FBX-PROT	fig 5.5	K4	+3V3 (FBX) Supply

Remark: If on the DST the text "ERROR 2" is displayed, this means that the communication from the TV to the DST has failed

5.4 Protections

5.4.1 General

The MG2.1E "Protection Diagram" shows the structure of the protection system. See protection diagram (fig 5.6)

One micro-processor.

The MG2.1E has only one micro-processor (OTC) and it remains active during Standby. This because power of the uP and the attached memory chip set is coming from the 3V3 supply, which is derived from the 5V Standby-circuitry. So in both power-on as in Standby-mode the uP is connected to this power supply. The micro processor controls the Standby-line for switching on and off the main supply. In the standby-mode or in the protection-mode the Standby-line will open the contacts of relay 1002 via T7000 and T7001, this results in switching off the mains input to the main supply (FFS). In the mean time via T7550 the intensity of LED of the opto-coupler will increase, which results in a quick slow-down of the FFS supply.

Two service-modes

To get a quick diagnoses the MG2.1E has two service-modes implemented:

The service default mode. Start-up of the set in a predefined way.
The service alignment mode. In this mode items of the set can be adjusted via a menu and with the help of test patterns.

Both modes can be entered via the service connector on the SSP (connector 0356) or via the DST (dealer service tool) or via Compair. The service alignment mode can not be entered in Standby, the set has to be in normal operation.

Protection levels

If a fault situation is detected an error code will be generated and if necessary the set will be put in the protection-mode. The protection-mode is indicated by blinking of the red LED. In some error cases the micro processor does not put the set in the protection-mode. The error codes of the error buffer can be read via the service-menu (SAM) or via the service send-LED and the DST/ Compair . The DST diagnose functionality will force the set in to the Service-standby, which is alike the usual Standby, however the micro-processor has to remain in normal operation completely.

The protections of the MG2.1E can be divided in 4 groups

- Protection from I^2C-busses (Fast and Slow) or I^2C-IC errors (device errors)
- Protection from the inputs on the OTC
- Protections from the status register of the HOP (communicated via I^2C-bus)
- DC-protection (sound amplifiers) monitored on OTC

5.4.2 Protection from the I^2C bus (fig. 5.7)

In normal operation some registers of the I^2C controlled ICs will be refreshed every 200 msec. During this sequence three I^2C-busses and the I^2C -ICs as well will be checked. The I^2C protection will take place if the SDA and SCL are whether short circuited to ground or to each other. An I^2C error can also occur, if the power supply of the IC is missing.

Protection from the inputs on the OTC (fig.5.8)

If a protection is detected at an input of the OTC, all protection inputs of the OTC will be scanned every 200 msec. for 5 times. If the protection on one of the inputs is still activated after 1 sec., then the set will be put in the protection-mode. Before the scanning is started a so called ESD-refresh will be carried out first, because the interrupt on one of the inputs may be caused either by a FLASH or by ESD. As a FLASH or ESD can harm the settings of some ICs, the HOP-HIP-ITT-EDRIC (Dolby-IC)-TEA6417-TEA6422-LTP-PICNIC and Tuner are initialised again to ensure the normal picture and sound conditions of the set.

- 8V6 and 5V2 protection. (See detailed figure 5.8)
- The presence of the 8V6 and 5V2 is sensed by the OTC. If the 8V6 and 5V2 is not present, then an error code is stored in the error buffer and the set is put in the protection-mode.
- BC protection (Beam Current). (See detailed figure 5.8)
- The beam current is measured by a circuit on the SSP. If the beam current exceeds a certain reference level, then via D6350 and T7351 the BC-input of the OTC is set to high. The error code is stored in the error buffer and the set is put in the protection-mode.
- LDP-protection (Line Deflection Protection) (See detailed figure 5.8)
- Two protection circuits are connected to the LDP-input of the HOP :
  1. Flash detection. From the EHT-info, via D6341 and T7341 a flash will stop the H-drive and line output stage immediately. The FLS-bit in the status register of the HOP is set to 'high'. As the duration of a flash is very short the FLS-bit will be reset to 'low' again after the flash refresh, so via a slow start the set will be started again.
  2. LDP detection. The EW-protection, coming from the line-output is also connected to the same input as above. The current through the EW-stage is measured by R3483 and R3484 on the LSP. The voltage across these precision resistors will increase in case of a failure at the line output stage. If the voltage becomes higher than 1 V, then the output of IC7484 will become 'high' and remains 'high' via D6485 and R3490. Via D6344 the H-drive will be stopped. The FLS-bit will be set to 'high' and remains 'high' by means of the software filtering even after a flash refresh. The OTC will put the set Standby-mode. The error code is stored in the error buffer and the set gets into the protection mode.

5.4.4 Protections from the status register of the HOP (fig. 5.9)

Every 200 msec. the status register of the HOP is read by the OTC via I^2C. If a protection signal is detected on one of the inputs of the HOP, then the relevant error bit in the HOP register is set to 'high'. If the error bit is still 'high' after 1 sec., the OTC will store the error code in the error buffer and depending on the relevancy of the error bit the set will either go into the protection-mode or not.

HFB : Horizontal Flyback (See detailed figure 5.9) Missing the horizontal fly back pulse is detected via an input of the HOP. One status bit is set to 'high'. The error code is stored in the error buffer and the set will go into the protection mode
VFB : Vertical Flyback (See detailed figure 5.9) The HOP will blank the screen , if the vertical flyback signals are not present at the VFB-guard input .The relevant status bit will

be set in the register of the HOP. The error code is stored in the error buffer, in this case protection is not necessary.

5.4.5 DC-protection, sound amplifiers (Fig. 5.10)

This is an urgent protection, the circuitry is located at the LSP. The output of the protection circuit will slow-down the FFS power supply immediately via the opto-coupler and via the Standby-relay the supply will be switched into Standby-mode at once. To be able to store the error code in the error buffer the protection signals are also wired to the OTC.

The protection is activated in case of

unbalance of +Vs and -Vs
unbalance of +7V7 and -7V7
DC output present on one of the audio amplifiers

5.5 Fault find trees

See fault find trees at the end of this chapter. (figures 5.11-5.17)

MC-Service

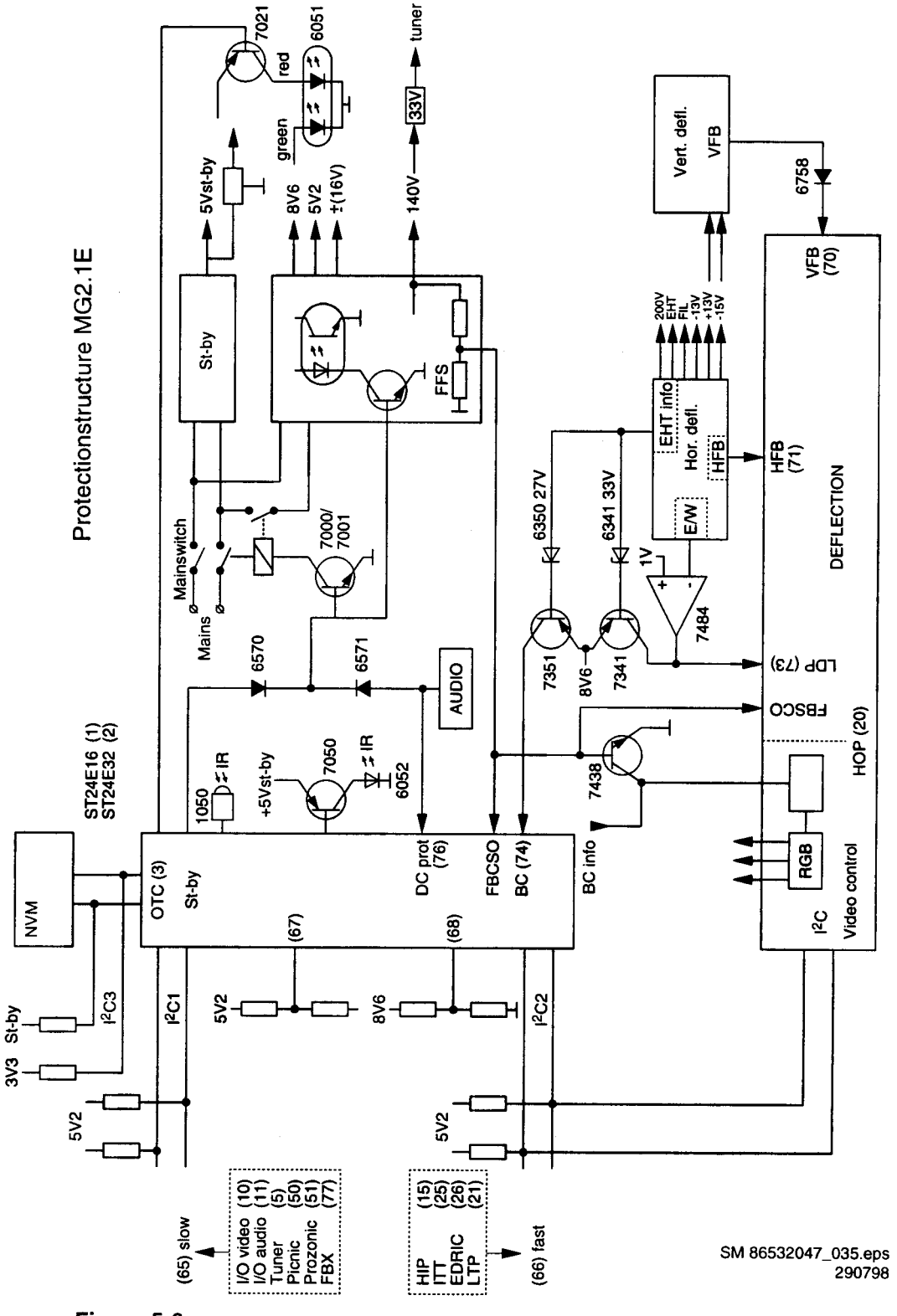
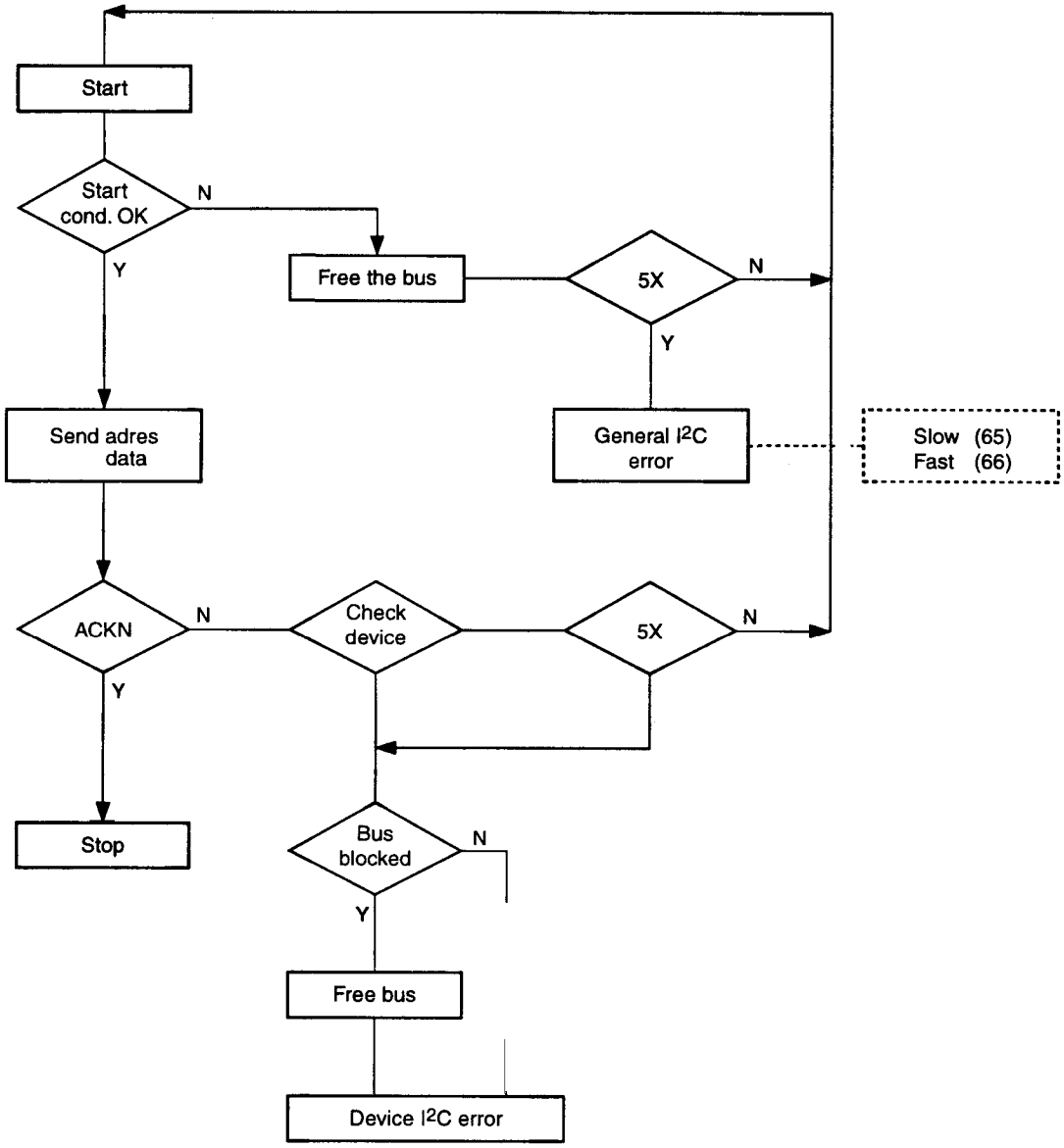

Protectionstructure MG2.1E
7021
6051
red
green
tuner
33V
5Vst-by
8V6
5V2
±(16V)
140V
St-by
FFS
Mainswitch
Mains
7000/
7001
6570
6571
AUDIO
1050
IR
+5Vst-by
7050
6052
ST24E16 (1)
ST24E32 (2)
NVM
OTC (3)
St-by
DC prot (76)
FBCSO
BC (74)
BC info
(67)
(68)
I²C1
I²C2
I²C3
3V3
St-by
5V2
8V6
Vert. defl.
VFB
6758
VFB (70)
200V
EHT
FIL
-13V
+13V
-15V
EHT info
Hor. defl.
HFB
E/W
HFB (71)
DEFLECTION
6350 27V
6341 33V
1V
7484
7351
7341
LDP (73)
FBSCO
HOP (20)
7438
RGB
I²C
Video control
(65) slow
I/O video (10)
I/O audio (11)
Tuner (5)
Picnic (50)
Prozonic (51)
FBX (77)
HIP (15)
ITT (25)
EDRIC (26)
LTP (21)
(66) fast
SM 86532047_035.eps
290798

Figure 5-6

I²C drivers



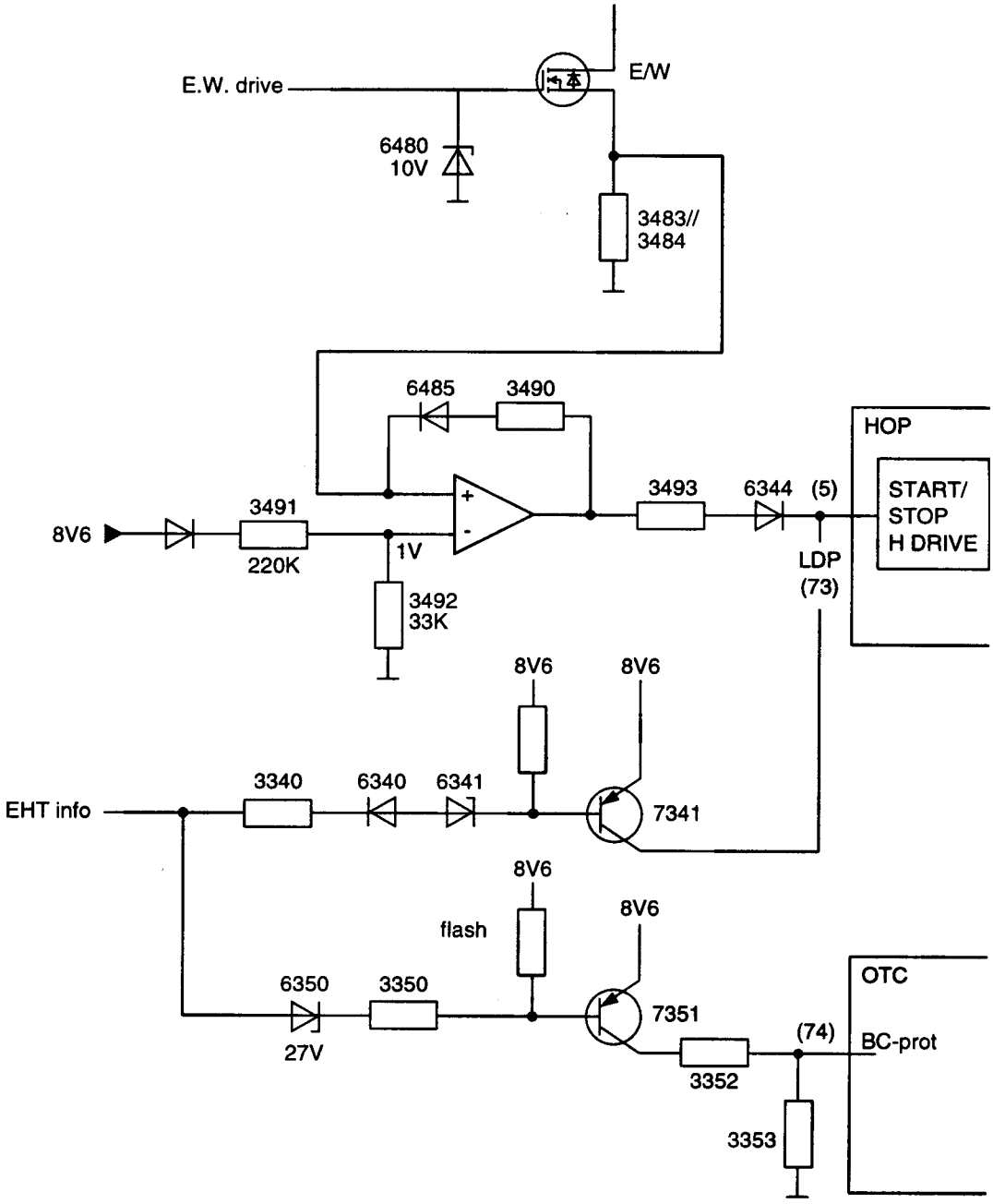
Slow	
TEA 6422	(11)
Tuner	(5)
Picnic	(50)
Prozonic	(51)
I/O video	(10)
FBX PROT	(77)

Fast	
LTP	(21)
Dolby	(26)
ITT	(25)
HIP	(15)
HOP	(20)

NVM-bus	
NVM	(1)
	(2)

SM 86532047_036.eps
290798

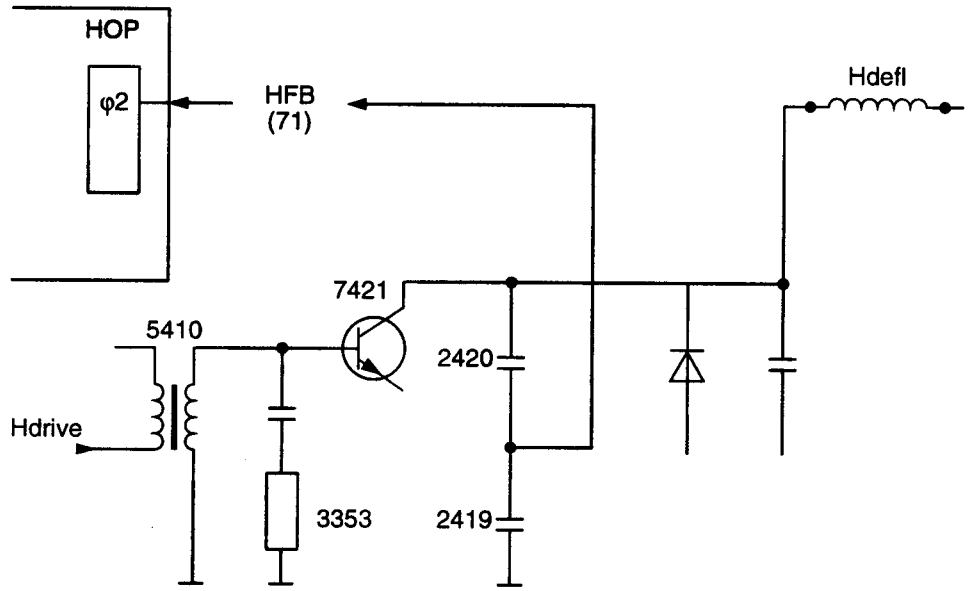
Figure 5-7



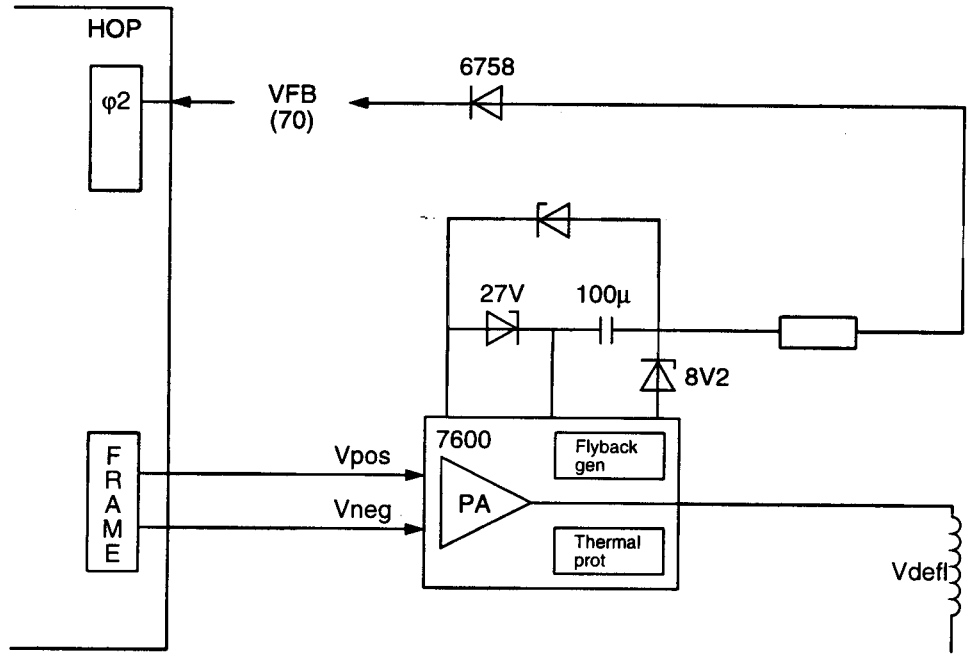
SM 86532047_038.eps
290798

Figure 5-8

HFB horizontal fly-back



VFB vertical fly-back



MC-Service

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Figure 5-9

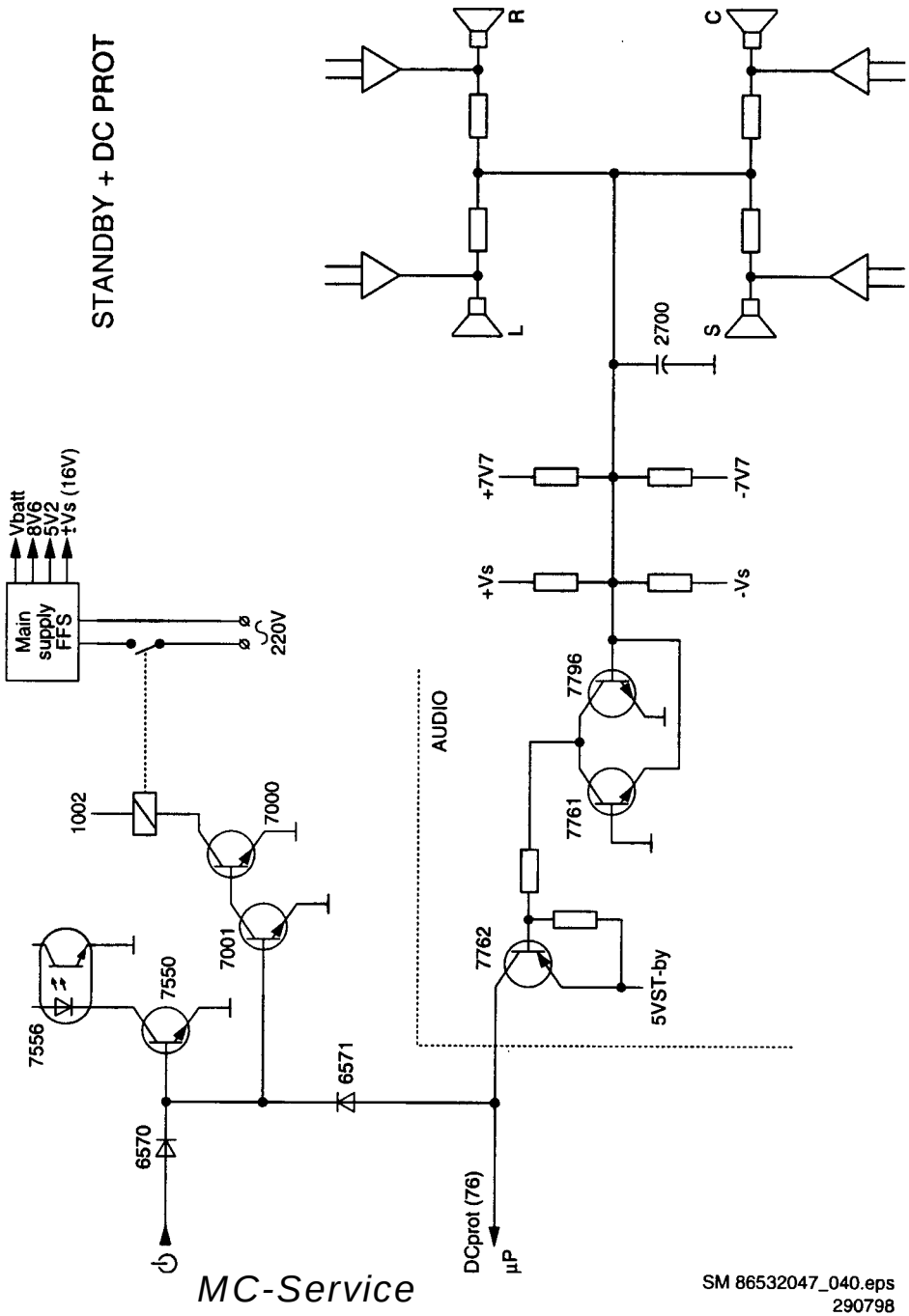
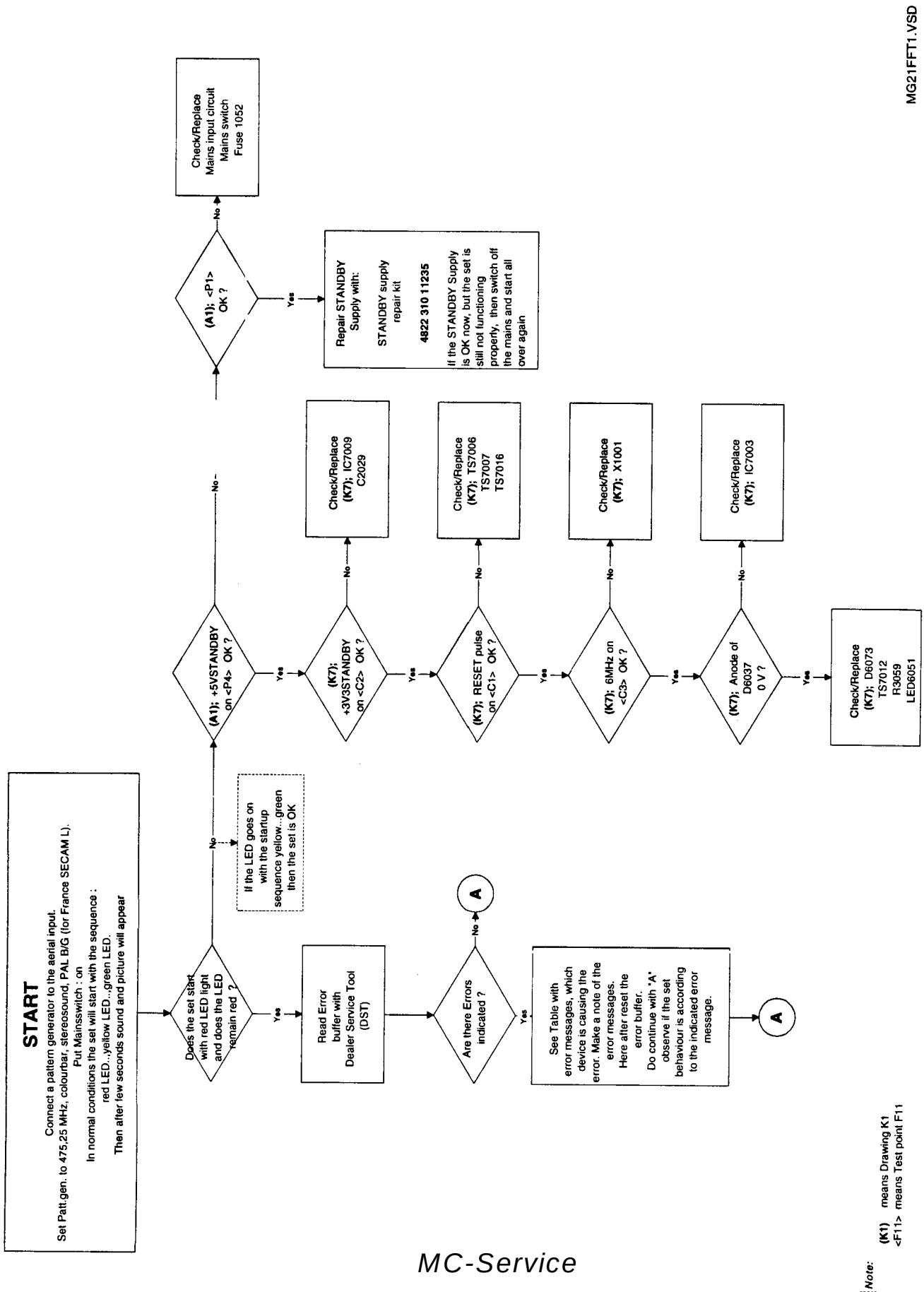

STANDBY + DC PROT
R
C
L
S
2700
+7V7
-7V7
+Vs
-Vs
Vbatt
8V6
5V2
+Vs (16V)
Main supply FFS
220V
AUDIO
7796
7761
1002
7000
7001
7762
5VST-by
7550
7556
6571
6570
DCprot (76)
µP
MC-Service
SM 86532047_040.eps
290798

Figure 5-10


START
Connect a pattern generator to the aerial input.
Set Patt.gen. to 475,25 MHz, colourbar, stereosound, PAL B/G (for France SECAM L).
Put Mainsswitch : on
In normal conditions the set will start with the sequence :
red LED...yellow LED...green LED.
Then after few seconds sound and picture will appear
Does the set start with red LED light and does the LED remain red ?
Yes
No
If the LED goes on with the startup sequence yellow...green then the set is OK
Read Error buffer with Dealer Service Tool (DST)
Are there Errors indicated ?
Yes
No
A
See Table with error messages, which device is causing the error. Make a note of the error messages. Here after reset the error buffer. Do continue with "A" observe if the set behaviour is according to the indicated error message.
A
(A1); +5VSTANDBY on <P4> OK ?
Yes
No
Check/Replace Mains input circuit Mains switch Fuse 1052
(A1); <P1> OK ?
Yes
No
Repair STANDBY Supply with:
STANDBY supply repair kit
4822 310 11235
If the STANDBY Supply is OK now, but the set is still not functioning properly, then switch off the mains and start all over again
(K7); +3V3STANDBY on <C2> OK ?
Yes
No
Check/Replace (K7); IC7009 C2029
(K7); RESET pulse on <C1> OK ?
Yes
No
Check/Replace (K7); TS7006 TS7007 TS7016
(K7); 6MHz on <C3> OK ?
Yes
No
Check/Replace (K7); X1001
(K7); Anode of D6037 0 V ?
Yes
No
Check/Replace (K7); IC7003
Check/Replace (K7); D6073 TS7012 R3059 LED6051
MG21FT1.VSD

Note: (K1) means Drawing K1
<F11> means Test point F11

MC-Service

Figure 5-11

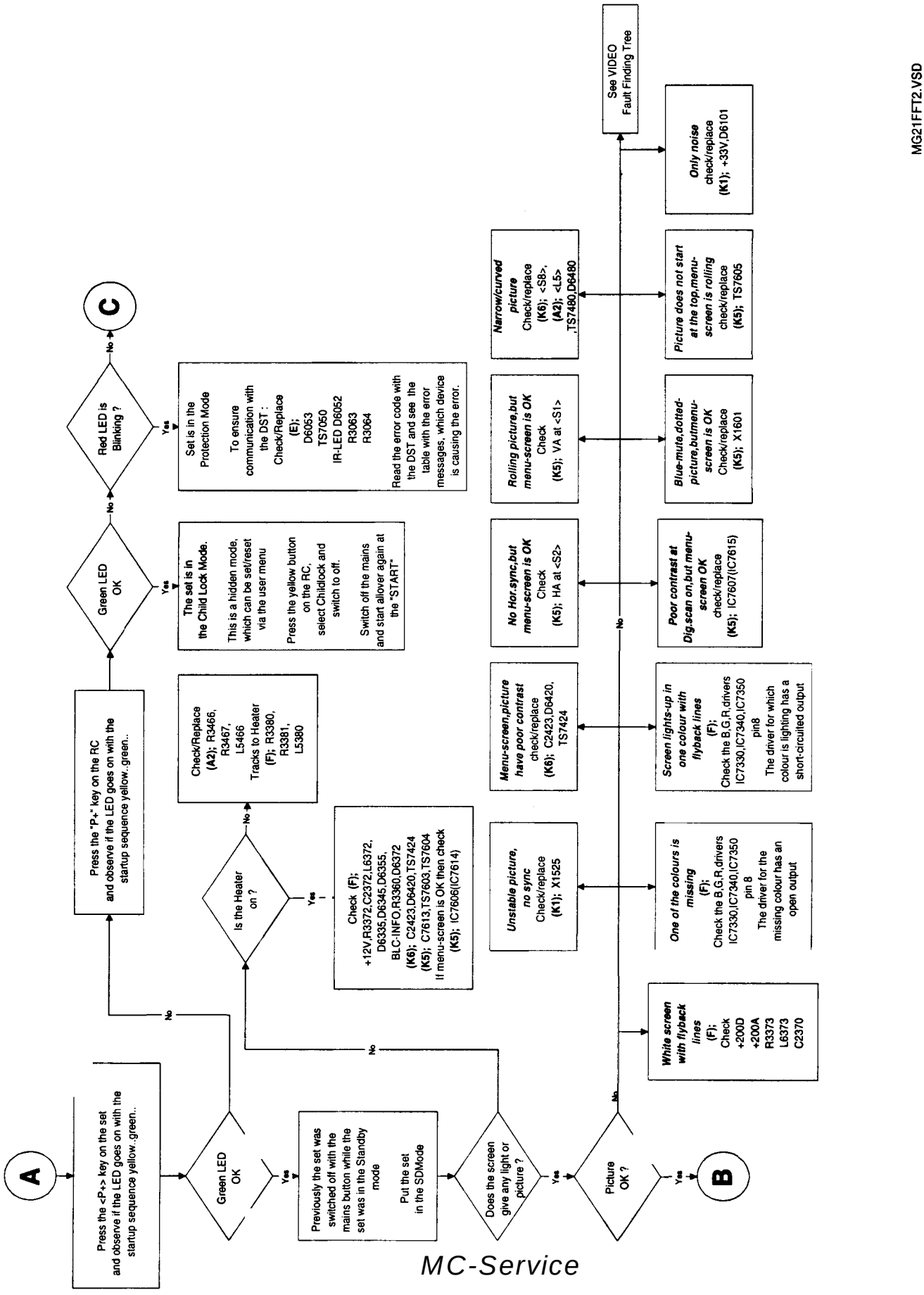
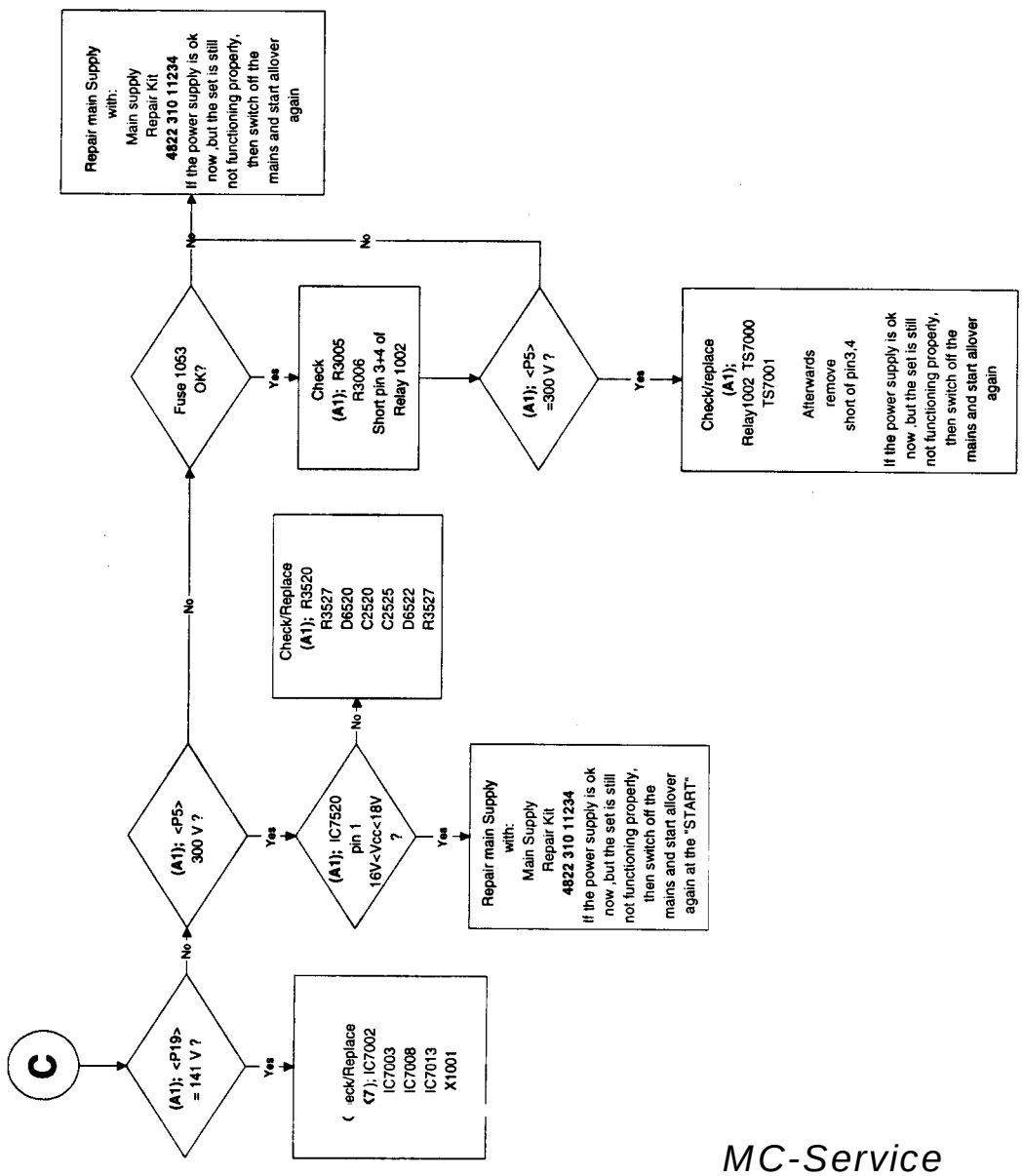

A
Press the <P+> key on the set and observe if the LED goes on with the startup sequence yellow..green..
Green LED OK
No
Yes
Press the "P+" key on the RC and observe if the LED goes on with the startup sequence yellow..green..
Green LED OK
No
Yes
The set is in the Child Lock Mode.
This is a hidden mode, which can be set/reset via the user menu
Press the yellow button on the RC, select Childlock and switch to off.
Switch off the mains and start allover again at the "START"
Red LED is Blinking ?
No
Yes
C
Set is in the Protection Mode
To ensure communication with the DST : Check/Replace (E); D6053 TS7050 IR-LED D6052 R3063 R3064
Read the error code with the DST and see the table with the error messages, which device is causing the error.
Previously the set was switched off with the mains button while the set was in the Standby mode
Put the set in the SDMode
Does the screen give any light or picture ?
No
Yes
Is the Heater on ?
No
Yes
Check/Replace (A2); R3466, R3467, L5466 Tracks to Heater (F); R3380, R3381, L5380
Check (F); +12V,R3372,C2372,L6372, D6335,D6345,D6355, BLC-INFO,R3360,D6372 (K6); C2423,D6420,TS7424 (K5); C7613,TS7603,TS7604 If menu-screen is OK then check (K5); IC7606(IC7614)
Unstable picture, no sync Check/replace (K1); X1525
Menu-screen,picture have poor contrast check/replace (K6); C2423,D6420, TS7424
No Hor.sync,but menu-screen is OK Check (K5); HA at <S2>
Rolling picture,but menu-screen is OK Check (K5); VA at <S1>
Narrow/curved picture Check/replace (K6); <S8>, (A2); <L5> ,TS7480,D6480
Picture OK ?
No
Yes
B
White screen with flyback lines (F); Check +200D +200A R3373 L6373 C2370
One of the colours is missing (F); Check the B,G,R,drivers IC7330,IC7340,IC7350 pin 8 The driver for which missing colour has an open output
Screen lights-up in one colour with flyback lines (F); Check the B,G,R,drivers IC7330,IC7340,IC7350 pin8 The driver for which colour is lighting has a short-circuited output
Poor contrast at Dig.scan on,but menu-screen OK check/replace (K5); IC7607(IC7615)
Blue-mute,dotted-picture,butmenu-screen is OK Check/replace (K5); X1601
Picture does not start at the top,menu-screen is rolling check/replace (K5); TS7605
See VIDEO Fault Finding Tree
Only noise check/replace (K1); +33V,D6101
MC-Service
MG21FFT2.VSD

Figure 5-12



MG21FFT3.VSD

Figure 5-13

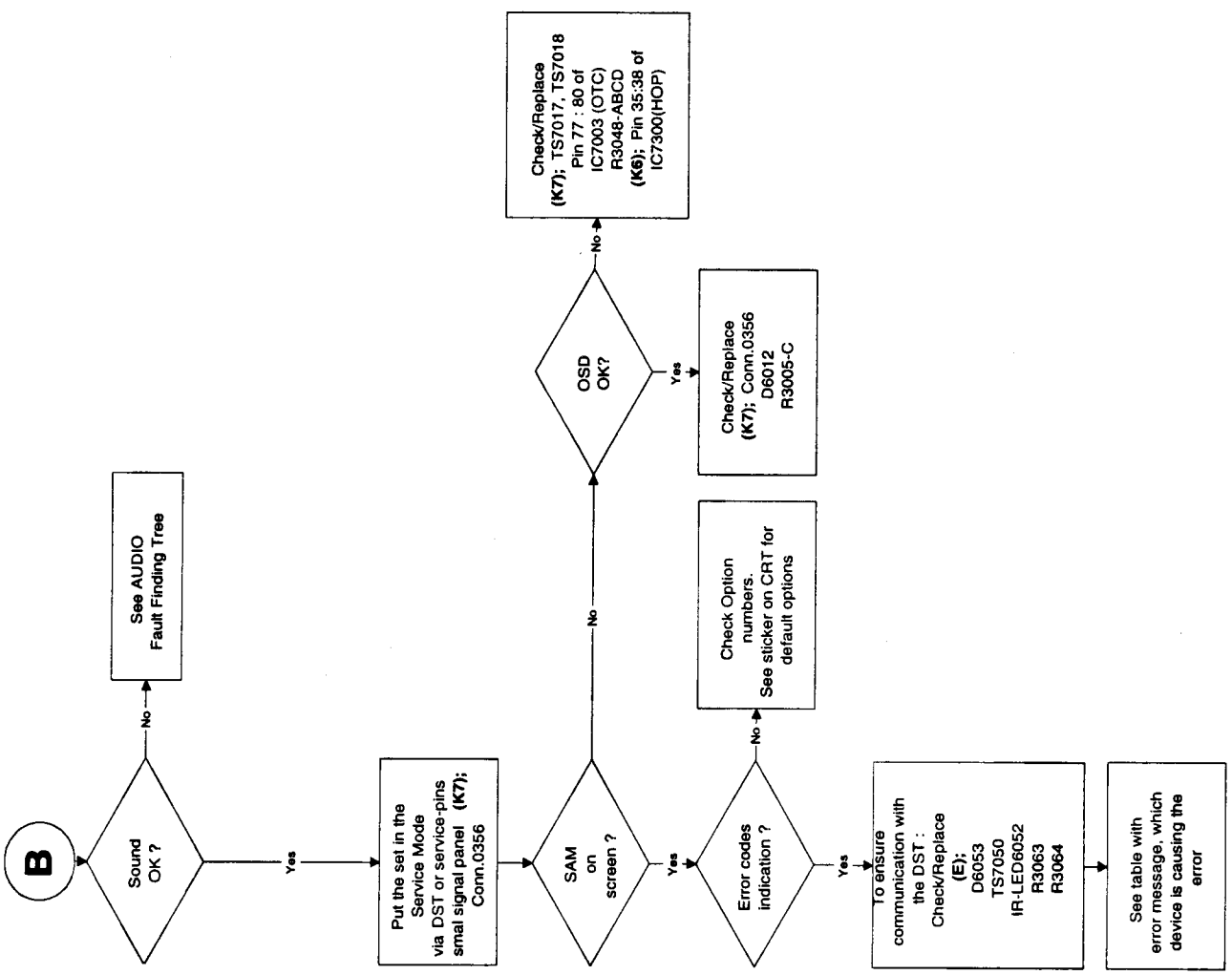

B
Sound OK ?
No
See AUDIO Fault Finding Tree
Yes
Put the set in the Service Mode via DST or service-pins smal signal panel (K7); Conn.0356
SAM on screen ?
No
OSD OK?
No
Check/Replace (K7); TS7017, TS7018 Pin 77 : 80 of IC7003 (OTC) R3048-ABCD (K6); Pin 35:38 of IC7300(HOP)
Yes
Check/Replace (K7); Conn.0356 D6012 R3005-C
Yes
Error codes indication ?
No
Check Option numbers. See sticker on CRT for default options
Yes
To ensure communication with the DST : Check/Replace (E); D6053 TS7050 IR-LED6052 R3063 R3064
See table with error message, which device is causing the error

Figure 5-14

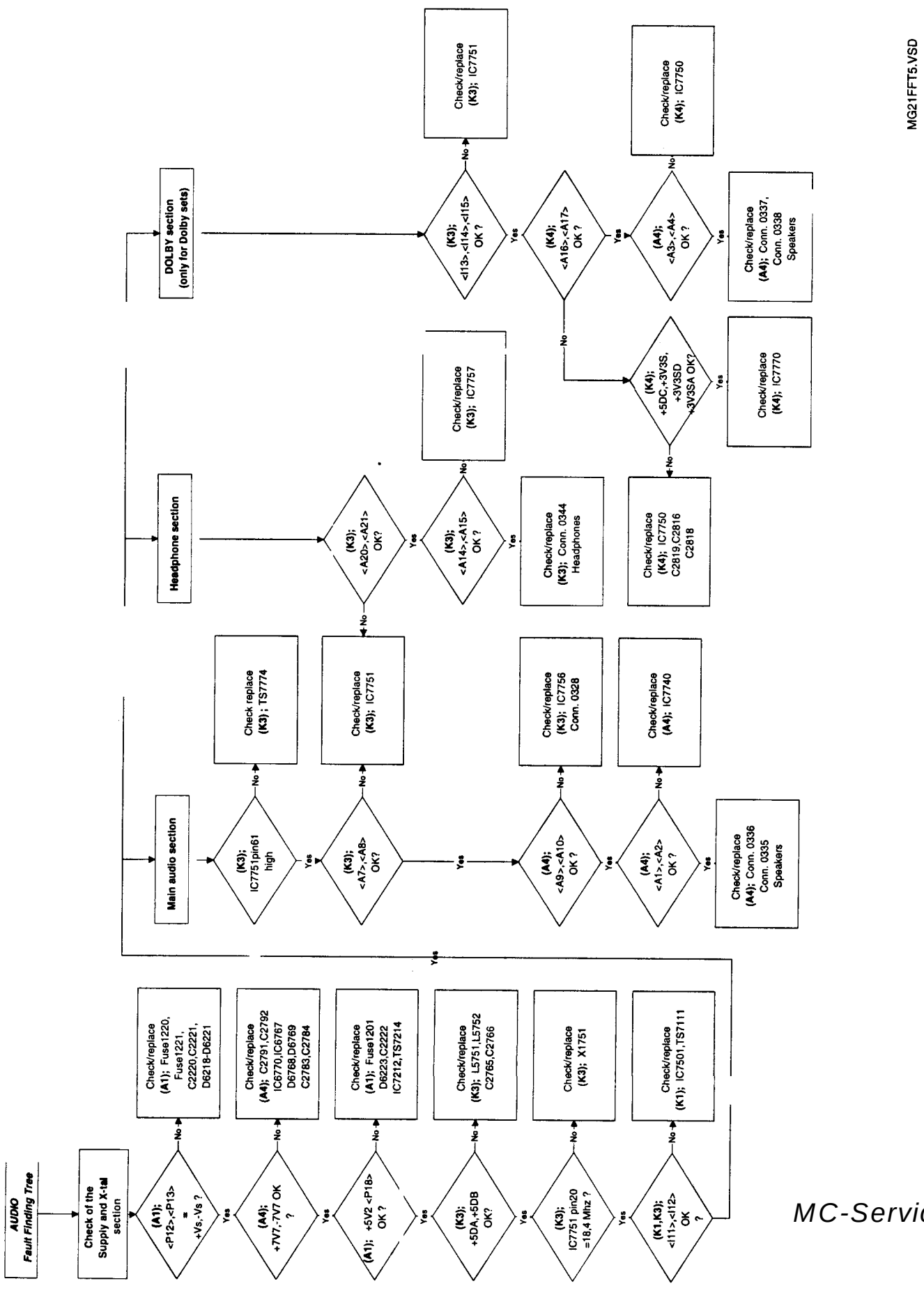

AUDIO
Fault Finding Tree
Check of the Supply and X-tal section
(A1); <P12>,<P13> = +Vs,-Vs ?
Check/replace (A1); Fuse1220, Fuse1221, C2220,C2221, D6218-D6221
(A4); +7V7,-7V7 OK ?
Check/replace (A4); C2791,C2792 IC6770,IC6767 D6768,D6769 C2783,C2784
(A1); +5V2 <P18> OK ?
Check/replace (A1); Fuse1201 D6223,C2222 IC7212,TS7214
(K3); +5DA,+5DB OK?
Check/replace (K3); L5751,L5752 C2765,C2766
(K3); IC7751 pin20 =18,4 Mhz ?
Check/replace (K3); X1751
(K1,K3); <I11>,<I12> OK ?
Check/replace (K1); IC7501,TS7111
Main audio section
(K3); IC7751pin61 high
Check replace (K3) ; TS7774
(K3); <A7>,<A8> OK?
Check/replace (K3); IC7751
(A4); <A9>,<A10> OK ?
Check/replace (K3); IC7756 Conn. 0328
(A4); <A1>,<A2> OK ?
Check/replace (A4); IC7740
Check/replace (A4); Conn. 0336 Conn. 0335 Speakers
Headphone section
(K3); <A20>,<A21> OK?
Check/replace (K3); IC7757
(K3); <A14>,<A15> OK ?
Check/replace (K3); Conn. 0344 Headphones
Check/replace (K4); IC7750 C2819,C2816 C2818
(K4); +5DC,+3V3S, +3V3SD +3V3SA OK?
Check/replace (K4); IC7770
DOLBY section (only for Dolby sets)
(K3); <I13>,<I14>,<I15> OK ?
Check/replace (K3); IC7751
(K4); <A16>,<A17> OK ?
Check/replace (K4); IC7750
(A4); <A3>,<A4> OK ?
Check/replace (A4); Conn. 0337, Conn. 0338 Speakers
Yes
No
MG21FT5.VSD

Figure 5-15

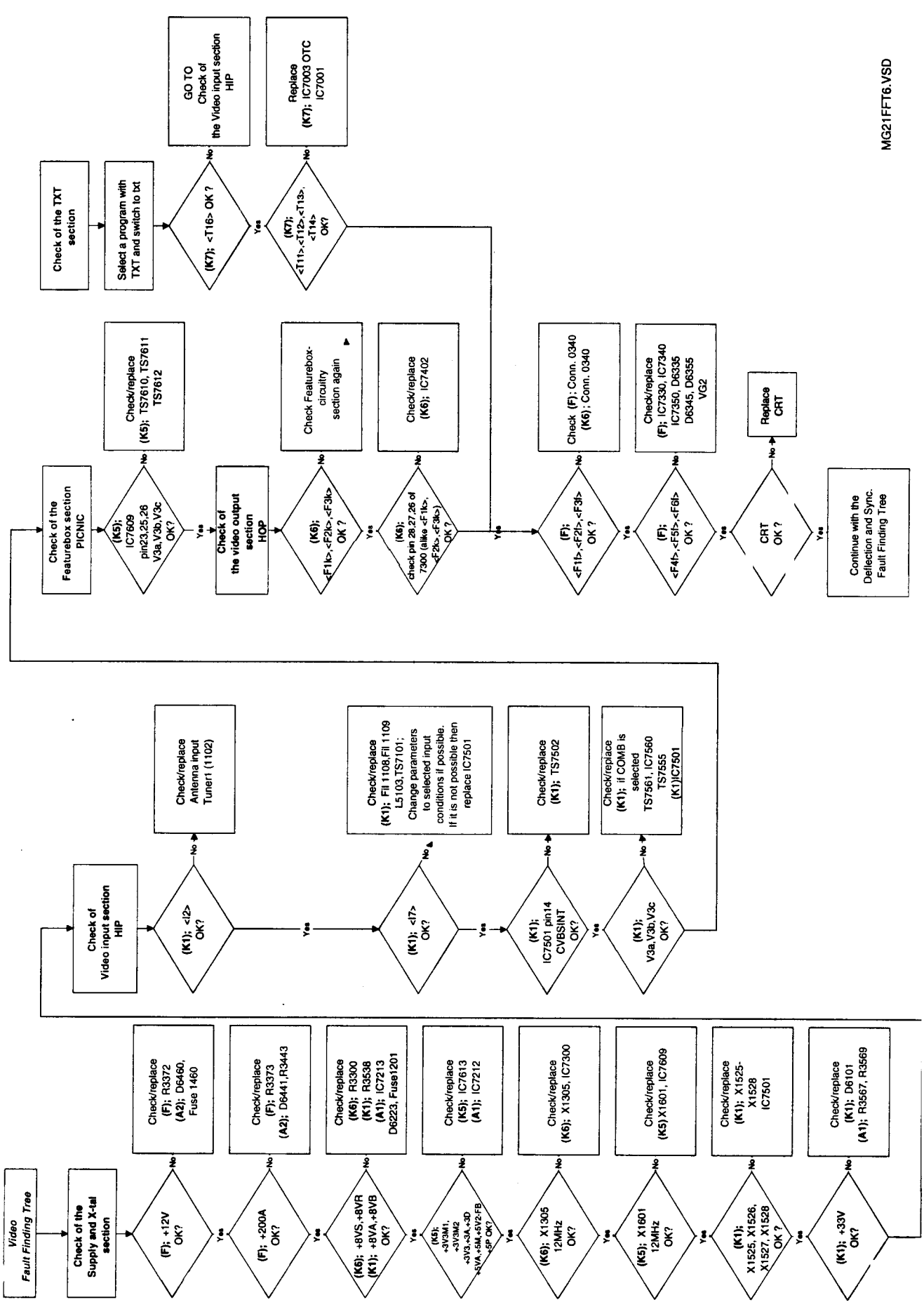
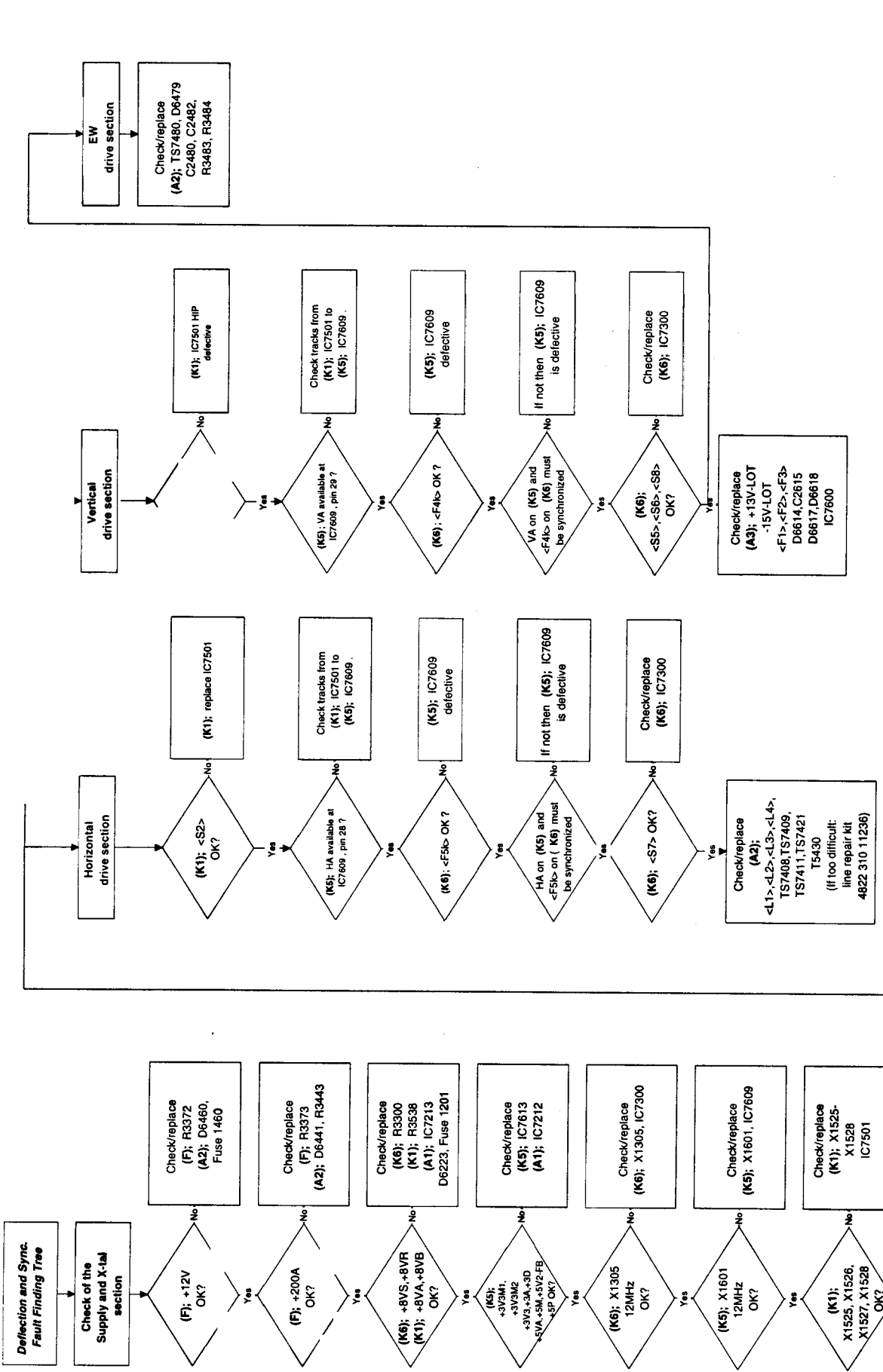

Video Fault Finding Tree
Check of the Supply and X-tal section
(F); +12V OK?
Check/replace (F); R3372 (A2); D6460, Fuse 1460
(F); +200A OK?
Check/replace (F); R3373 (A2); D6441,R3443
(K6); +8VS,+8VR (K1); +8VA,+8VB OK?
Check/replace (K6); R3300 (K1); R3538 (A1); IC7213 D6223, Fuse1201
(K5); +3V3M1, +3V3M2 +3V3,+3A,+3D +5VA,+5M,+5V2-FB +5P OK?
Check/replace (K5); IC7613 (A1); IC7212
(K6); X1305 12MHz OK?
Check/replace (K6); X1305, IC7300
(K5); X1601 12MHz OK?
Check/replace (K5) X1601, IC7609
(K1); X1525, X1526, X1527, X1528 OK ?
Check/replace (K1); X1525-X1528 IC7501
(K1); +33V OK?
Check/replace (K1); D6101 (A1); R3567, R3569
Check of Video input section HIP
(K1); <i2> OK?
Check/replace Antenna input Tuner1 (1102)
(K1); <i7> OK?
Check/replace (K1); FII 1108,FII 1109 L5103,TS7101; Change parameters to selected input conditions if possible. If it is not possible then replace IC7501
(K1); IC7501 pin14 CVBSINT OK?
Check/replace (K1); TS7502
(K1); V3a,V3b,V3c OK?
Check/replace (K1); if COMB is selected TS7561, IC7560 TS7555 (K1)IC7501
Check of the Featurebox section PICNIC
(K5); IC7609 pin23,25,26 V3a,V3b,V3c OK?
Check/replace (K5); TS7610, TS7611 TS7612
Check of the video output section HOP
(K6); <F1k>,<F2k>,<F3k> OK ?
Check Featurebox-circuitry section again
(K6); Check pin 28,27,26 of 7300 (alike <F1k>, <F2k>,<F3k>) OK ?
Check/replace (K6); IC7402
(F); <F1f>,<F2f>,<F3f> OK ?
Check (F); Conn. 0340 (K6); Conn. 0340
(F); <F4f>,<F5f>,<F6f> OK ?
Check/replace (F); IC7330, IC7340 IC7350, D6335 D6345, D6355 VG2
CRT OK ?
Replace CRT
Continue with the Deflection and Sync. Fault Finding Tree
Check of the TXT section
Select a program with TXT and switch to txt
(K7); <T16> OK ?
GO TO Check of the Video input section HIP
(K7); <T11>,<T12>,<T13>, <T14> OK?
Replace (K7); IC7003 OTC IC7001
Yes
No
MG21FFT6.VSD

Figure 5-16



MG21FFT7.VSD

MC-Service

8 Electrical alignments

8.1 General alignment conditions

All electrical alignments should be made under the following conditions:

- Power supply voltage: 220-240V ± 10%; 50-60 Hz ± 5%
- Warm-up time >10 minutes
- Voltages and oscillograms are measured in relation to tuner earth (with exception to the voltages on the primary side - of the power supply). Never use the cooling fins/ plates as ground.
- Test probe: Ri > 10 MOHM, Ci < 20 pF.

8.2 Alignments on the large signal panel (LSP)

+141V (VBAT) supply voltage

Connect a voltmeter across C2569 (diagram A1, +VBAT).
Switch on the set.
Using potentiometer R3559 (diagram A1) adjust the VBAT supply voltage to +141V ± 0V5. (see fig. 8.1)

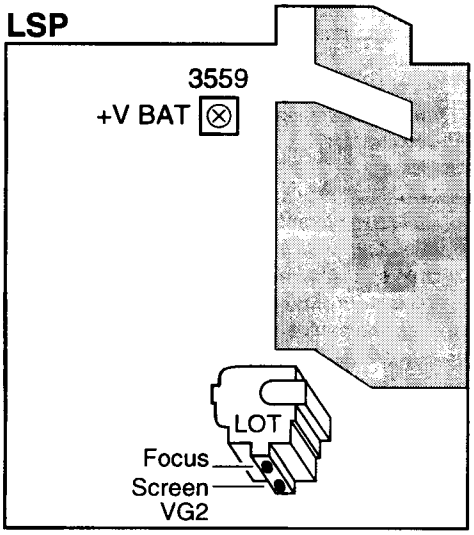


Figure 8-1

Focusing

Tune the set to a cross hatch test-pattern.
Adjust the focus potentiometer (diagram A1, upper knob on the LOT) for an overall optimum focusing of the picture.

Vg2 adjustment

Elucidation: In the frame blanking period of the R,G and B signals applied to the CRT, alternately per frame two measuring pulses with different DC levels are inserted by the "HOP" video processor IC7300. In one frame blanking a pulse is inserted used as reference for the Vg2 adjustment and in the next frame blanking a pulse is inserted used as reference for the internal white "D" adjustment. For the Vg2 adjustment the pulse with the highest DC-level is used.

Put the set in the SDM mode (via the <default> button on the DST, or via short circuiting the SDM pins 2 and 3 of connector 0356 on the SSP (diagram K7).
Insert a black test-pattern signal (carrier 475.25 MHz) to the tuner input.
Connect an oscilloscope (position 50V/Div DC and 2ms/ Div) alternately to the CRT cathodes (red pin 8, green pin 6, blue pin 11) and measure for each cathode the DC level of the measuring pulse (see elucidation above and fig. 8.2) and write down each value. Remark: Trigger the scope extern via a CVBS signal (for instance via pin 19 of the scart1 connection).
- Adjust the VG2 potentiometer (fig. 8.1, lower knob on the LOT) so that the measuring pulse with the highest noted level is on 160V level.

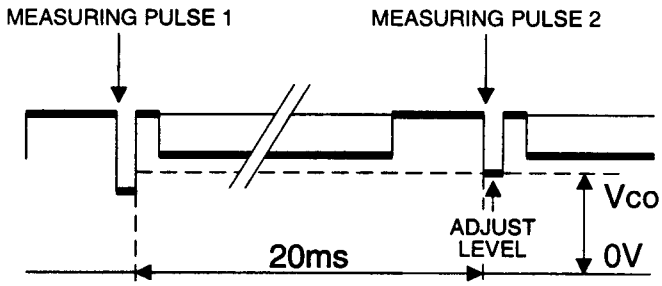


Figure 8-2

8.3 Alignments on the small signal panel (SSP)

8.3.1 40.4 MHz neighbour-channel sound trap

- Tune to a checker board test-pattern (system BG or relevant system - and carrier frequency of 475.25 MHz).
- Connect an oscilloscope (trigger line frequent) to pin 19 (CVBS out) of the scart1 connection.
- Turn the core of L5103 (diagram K1) completely downwards. (see fig. 8.3)
- Turn the core upwards till under and overshoot arise at the black/white and white/black transitions in the video signal. (see fig. 8.4)
- Turn the core downwards again till above mentioned under and overshoot is just disappeared.

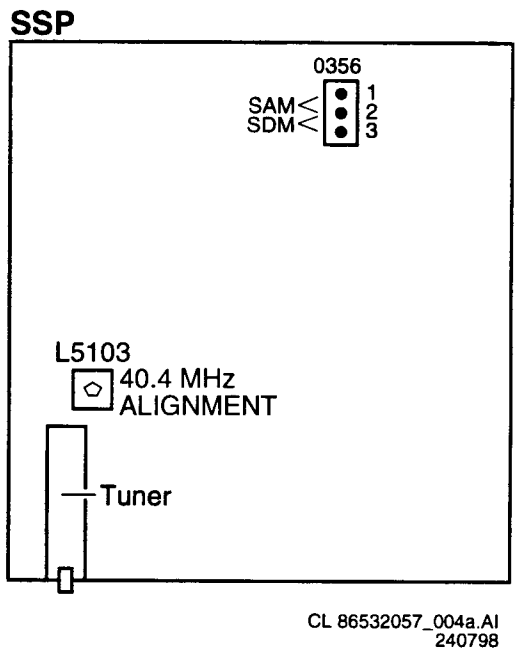


Figure 8-3

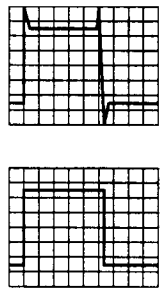


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Figure 8-4

8.4 Alignments needing SAM-mode + measuring equipment

(these alignments could be of interest when ICs (7501, TDA9320H), or the EAROM (7008, ST24E16) are exchanged on the SSP)

8.4.1 'IF AFC' (navigation to this menu item via Alignment --> General--> IF AFC)

Supply via a Service generator (e.g. PM5518) a TV-signal, with a signal-strength of about 1 mV. Preferable this signal is a multiburst signal. Frequency 475.25 Mhz. Use BG if possible, otherwise match the system of your generator with the received signal in the set. In this procedure Servicer will be asked to swap sometimes from Install-menu to Service Alignment Menu. Procedure how to check correct alignment:

- First set frequency TV-set to 475 Mhz in 'search-line' of Manual Installation Menu
- IF frequency-value in 'Fine Tune'-line between 475.18 and 475.31, you do not need to re-align AFC-value as mentioned above (SAM-menu)
- IF this is NOT the case, decrease 'IF AFC'-value (in SAM-menu) if frequency on 'Fine-tune'-line was lower than 475.18, or increase 'IF AFC'-value if frequency on 'Fine-tune'-line was higher than 475.31. (initiallly first a 'IF AFC'-alignment can be done, making the multiburst signal flat. This signal can be measured at pin 19 of scart 1. This is however not accurate enough to optimise the 'IF AFC'.

Alignment procedure:

- set 'IF AFC'-value in SAM
- store in SAM this setting
- go to manual install menu
- set frequency to 475
- read in 'Fine tune'-line how set responds
- if this value is between 475.18 and 475.31 then OK, otherwise proceed alignment by setting other 'IF AFC'-setting

Service-tip:

If you do not trust the accuracy of the frequency of your Service-generator first 'measure' with 'Fine tune'-line (manual install-menu) of a good set your Service generator.

8.4.2 'Tuner AGC'

Supply a TV-signal, with a frequency of 475.25 Mhz and a signal-strength of about 2 mV.

Measure the DC-voltage on pin 1 of the Tuner. (item 1102) With the 'Tuner AGC'-alignment in the SAM-menu , this voltage can be aligned. Alignment is correct when DC-voltage is just below 3.8 V

8.5 Alignments and settings in the Service Alignment Menu

8.5.1 General

To switch to SAM-mode you have to do the following:

briefly shorting the service pins 'SERVICE ALIGNMENT MODE' on the frontside of the SSP (pins 1 and 2 of connector 0356) or:
pressing the <align>- key on the Dealer Service Tool (DST) (RC7150), followed by keying in the password "3140" and then pressing the <OK> key.

The Service Alignment Mode menu will now appear on the screen. The following information is now displayed:

1. The software date ('Date') and version ('ID.') of the ROM. (Example: MG21E11.0_01381) (this software-code stands for MG21 (chassis), E for Europe, 1-language, 1.0 software version, xxxxx latest 5 digits of 12nc code software)
2. The accumulated total of operation hours ('Operation Hours').
3. ('Errors') followed by maximal 10 errors. The most recent error is displayed at the upper left. For explanation errors see chapter 5
4. ('Defect. Module'). Here the module that generates the error is displayed. (if there are multiple errors in the buffer that have not all been generated by a single module, there is probably another defect. The message 'Unknown' will then be displayed here).
5. ('Reset Error Buffer'). The error buffer can be resetted by pressing the 'cursor right' key.
6. ('Functional Test'). All devices are tested via the > key. Eventual errors are displayed in the error buffer. The error buffer is not erased, the contents return when the Functional Test is terminated.
7. ('Alignments'). This enables the Alignments sub-menu to be called up.

The following alignments can be selected:

'General':

- Alignment of 'Drive'
- 'Peak White Limiter'
- 'Luminance Delays'
- 'EHT Compensation'
- 'Soft Clipper'
- 'Luma Gain'
- 'IF AFC'
- 'Tuner AGC'

'Normal Geometry':

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- General geometry alignments.

'Super wide geometry': (only valid for widescreen sets)

- Geometry alignments for the 'Panorama' position in 16:9 sets. (only valid for wide screen sets; alignments can be performed, however it is better to set values as mentioned below)

'Options':

- Setting the initialisation codes in the set via text.

'Option number':

All options together, expressed in two long numbers. The original factory setting for these numbers can be found on the picture tube sticker on the inside of the set.

'Store':

- Store all alignments.

'Store default settings'.

Reset all values in the EAROM to pre-programmed values, related to picture and sound settings (has the same effect as replacing the EAROM with a new one, only here also the programs are gone).

The alignments are explained now in the sequence of the sub-menu:

8.5.2 General alignments in Service Alignment Menu:

Once all alignments/settings have been completed the item 'Store' must be selected to record all the values in the permanent memory of the set.
If the option codes have been changed and stored, the set has to be switched on and off using the mains switch to activate the new settings (when switching on and off via Standby, the option code settings are NOT read by the microprocessor).
If an empty EAROM (permanent memory) is detected, all settings are set to pre-programmed default (standard) values.
A built-in test pattern can be called up in various sub-menus. The test pattern generator can be switched on using the item 'Test pattern on/off'. The test pattern only appears AFTER the specific alignment has been selected. The test patterns are generated by the teletext-IC.

'Drive'
Tint-settings:

Set the white levels for the three tint-settings 'Normal' . 'Warm' and 'Cool' is calculated by the processor then ('Warm': R+4, B-7 and 'Cool': R-3, B+3) For 4:3 picture tubes (25" and 29") the next values must be entered:

	Cool	Normal	Warm
R	22	25	29
G	20	20	20
B	17	14	7

For wide screen picture tubes (24", 28" and 32") the next values must be entered:

	Cool	Normal	Warm
R	22	25	29
G	20	20	20
B	17	14	7

'Cathode':

This alignment, must also be covered by a table with values for all picture-tube sizes. For 4:3 picture tubes (25" and 29") the next value must be entered: 5 For wide screen picture tubes (24", 28" and 32") the next values must be entered:

'Peak White Limiter'
Dependent of the picture-tube size (25", 29", and 24"/28"/32" widescreen tubes) the next value of the table must be

entered:

24"	10
25"	10
28"	10
29"	10
32"	10

'Luminance delays'
With the 'Luminance delays' alignment the luminance information is placed on the chrominance information (brightness is pushed onto the colour). Use a colour bar/ grey scale pattern as test signal.

Lum. Delay Pal: Apply a PAL colour bar/greyscale pattern as a test signal. Adjust 'Lum. Delay Pal' until the transients of the colour part and black and white part of the test pattern are at the same position.
Lum. Delay Secam: Apply a SECAM colour bar/greyscale pattern as a test signal. Adjust 'Lum. Delay Pal' until the transients of the colour part and black and white part of the test pattern are at the same position.
Lum. Delay Bypass: Apply a NTSC colour bar/greyscale pattern as a test signal. Adjust 'Lum. Delay Bypass' until the transients of the colour part and black and white part of the test pattern are at the same position.

'EHT compensation'
Fixed value: 0

'Soft clipper"
Fixed setting: 'Pwl+0%'

'Luma gain'
Fixed value:

'IF AFC'
See chapter 8.4.1. The SAM-mode is needed to make alignment, a test generator to make signal, an oscilloscope to measure at scart-output and the Install-menu to check finetuning-value

'Tuner AGC'
See chapter 8.4.2. The SAM-mode is needed to make alignment, a test generator to make signal, a DC-Voltmeter to measure at pin 1 of Tuner.

8.5.3 Geometry alignments 'Normal Geometry' in the Service Alignment Menu

Vertical amplitude and centring
Select 'Test Pattern on'

Set the begin conditions for 4:3 sets (25", 28" and 29"):

- Vertical S-correction value on 13 for 29"-set and on 19 for the 25"- and 28"-sets.

The boundary-stripes of the test pattern should be positioned on the edge of the picturetube.

Set the begin conditions for 16:9 sets (24", 28", 32"):

- Vertical S-correction value on 7 for 24"-set, on 8 for the 28" and on 7 for the 32"-set.

The boundary-stripes of the test pattern should be positioned on the edge of the picturetube.

1. Align 'Vslope' (when aligning the below half of the picture is blanked). The middle line of the test pattern must be matched with the edge of this blanking/picture transient in the middle of the picture. Pushing > button again, gives you previous menu again. (This alignment is meant to align the zero-crossing of the frame-deflection to the mechanical middle of the picture tube)
2. Align the vertical amplitude using 'V amplitude' so that the test pattern is fully visible.
3. Align the vertical centring using 'V shift' so that the test pattern is located vertically in the middle.
4. If necessary repeat the alignment of 'V amplitude', in order to get 'V shift' OK.

Vertical S correction
Select 'Test pattern on'

Align the vertical S correction using 'V S-correction' so that the vertical amplitude at the top of the picture is equal to the amplitude in the middle of the picture.

Horizontal centring and amplitude
Select 'Test pattern on'.

1. Using 'H amplitude' align the horizontal amplitude so that the entire test pattern is visible.
2. Use an external test signal, with a centre-reference from a service-generator. Use 'H shift' to align the picture horizontally in the middle.
3. Repeat the 'H amplitude' alignment if necessary.

East/west alignment
Select 'Test pattern on'.

1. Use 'East/West Parabola' to align the vertical lines until straight.
2. Use 'East/West Corner' to align the vertical lines in the corners until straight.
3. Use 'East/West Trapezium' to align for a rectangular
4. Use 'Horizontal Parallelogram' to align for straight vertical lines if necessary.
5. If necessary select 'East/West Corner' and align as required.
6. Repeat steps 1 to 4 if necessary.

8.5.4 Geometry alignments 'Super wide geometry' in the Service Alignment Menu

Only applicable to 16:9 sets

The header of this paragraph and also the menu's are misleading.

We only need to set the following values, if the normal geometry alignment has been performed correctly.

Vertical S correction: enter the value of normal geometry.
Horizontal amplitude: enter the value of normal geometry subtracted by 4.
East/west parabola: enter the value of normal geometry.

8.6 Option menu

Introduction

The microprocessor communicates with a large number of I^2C-ICs in the set. To ensure good communication and make digital diagnosis possible, the microprocessor has to know which ICs have to be addressed. The presence of specific ICs or functions is made known by means of the option codes.

All options codes can be manipulated using both the option numbers and/or the Option menu.

All hardware related options are incorporated under the heading 'Options' of the 'Alignments' sub-menu of the 'Service Alignment Mode'.

All software related options that are incorporated under the heading 'Dealer Options' of the 'Service Alignment Mode", can also be reached directly via the <dealer>-button of the DST.

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8.7 Dealer Options in the Service Alignment Mode

Menu-item	Subjects	Options	Physically in the set
Teletext	TXT	Yes	Teletext software feature on
		No	Teletext software feature off
Communication	Easylink	Yes	Project 50 (easylink) set
		No	No project 50 (easylink) set
Picture tube	CRT Type	4:3	4:3 picture tube
		16:9	16:9 picture tube
	only for 1 6:9: Picture Rotation	Yes	Frame rotation circuitry present on LSP (IC7440 diagram A3)
		No	Frame rotation circuitry not present on LSP (IC7440 diagram A3)
Video Repro Options	Feature box type	100Hz	IC7606 present on SSP (diagram K5)
		Digital Scan	IC7606 and IC7607 present on SSP (diagram K5)
	Combfilter	Yes	IC7560 present on SSP (diagram K1)
		No	IC7560 not present on SSP (diagram K1)
	Picnic AGC	Yes	In normal operation: Yes
		No	During 'Drive' alignments: No
	TXT Dualscreen	Yes	TXT DualScreen software feature on
		No	TXT DualScreen software feature off
	EPG Dualscreen	Yes	IC7013 present on the SSP (diagram K7)
		No	IC7013 not present on the SSP (diagram K7)
Source Selection	External 3	Yes	3rd EURO connector present
		No	No 3rd EURO connector present
Audio Repro	Acoustic system	Normal	Applicable for sets without subwoofer
		Enhanced	Applicable for sets with subwoofer
Miscellaneous	NextView	Yes	NextView present
		No	Nextview not present
	Heatsink Present	Yes	Heatsinks present on CRT/Scavem panel (diagram F)
		No	Heatsinks not present on CRT/Scavem panel (diagram F)

After the option(s) have been changed, they must be stored via the STORE command.
The new option is only active after the TV is switched off and then back on again using the mains switch (the EAROM is then read out again).

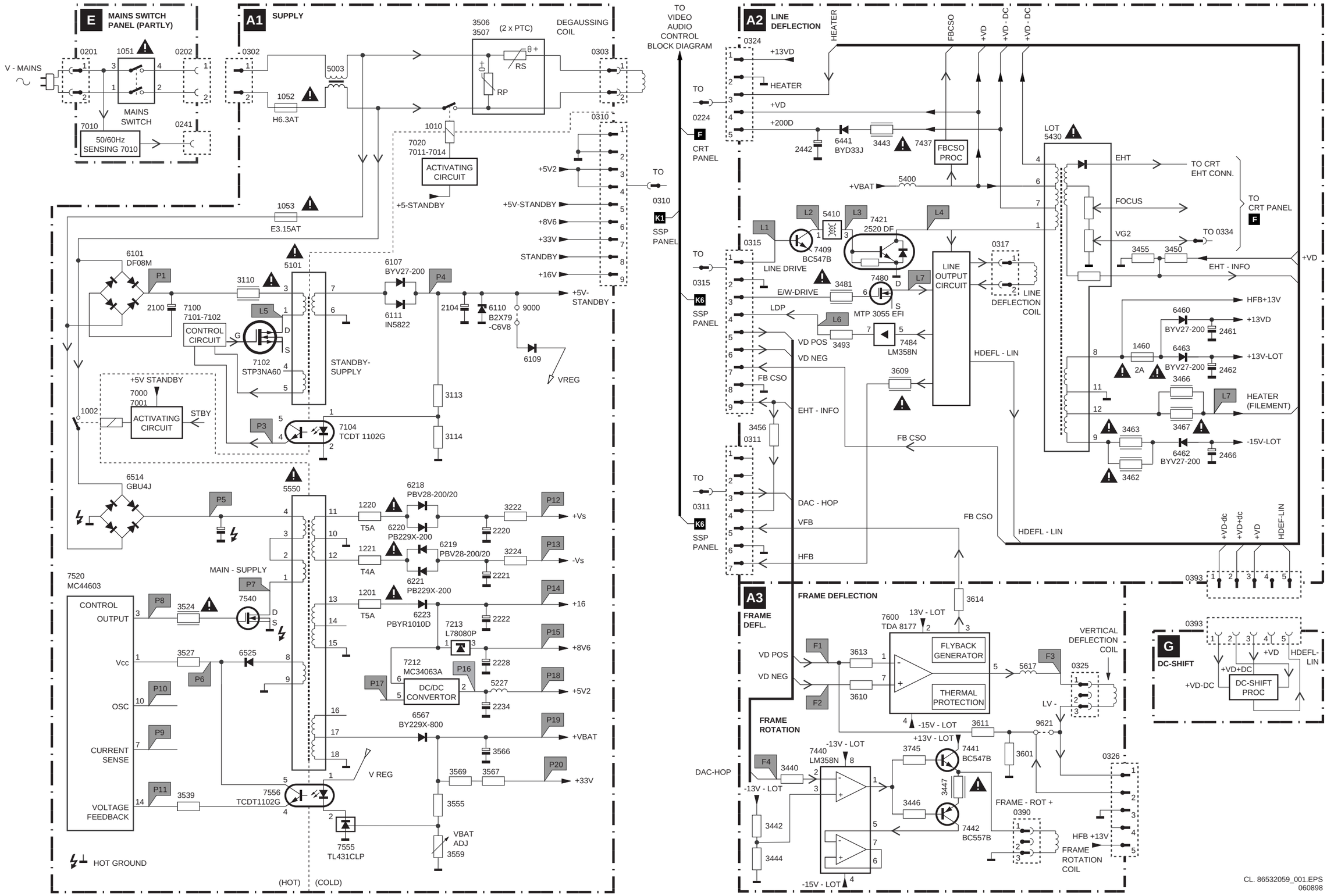
8.8 'Option number'

In case the EAROM has to be replaced, all the options will also require resetting. To be certain that the factory settings are reproduced exactly, both option numbers have to be set. These numbers can be found on a sticker on the picture tube.

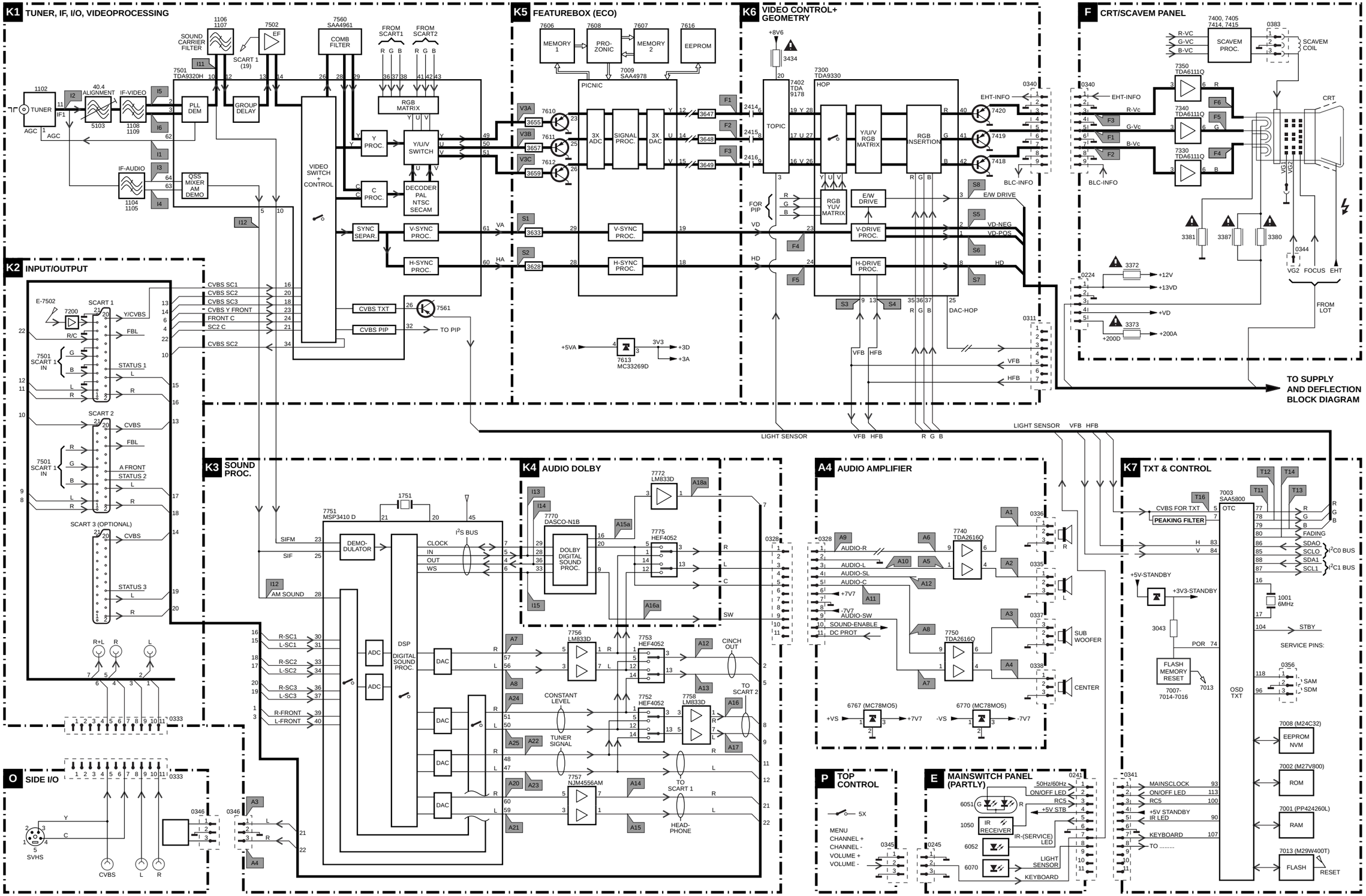
Example: option number of 29PT8304/12 is:

00512 04352 04096 00016

04134 00001 00000 00000

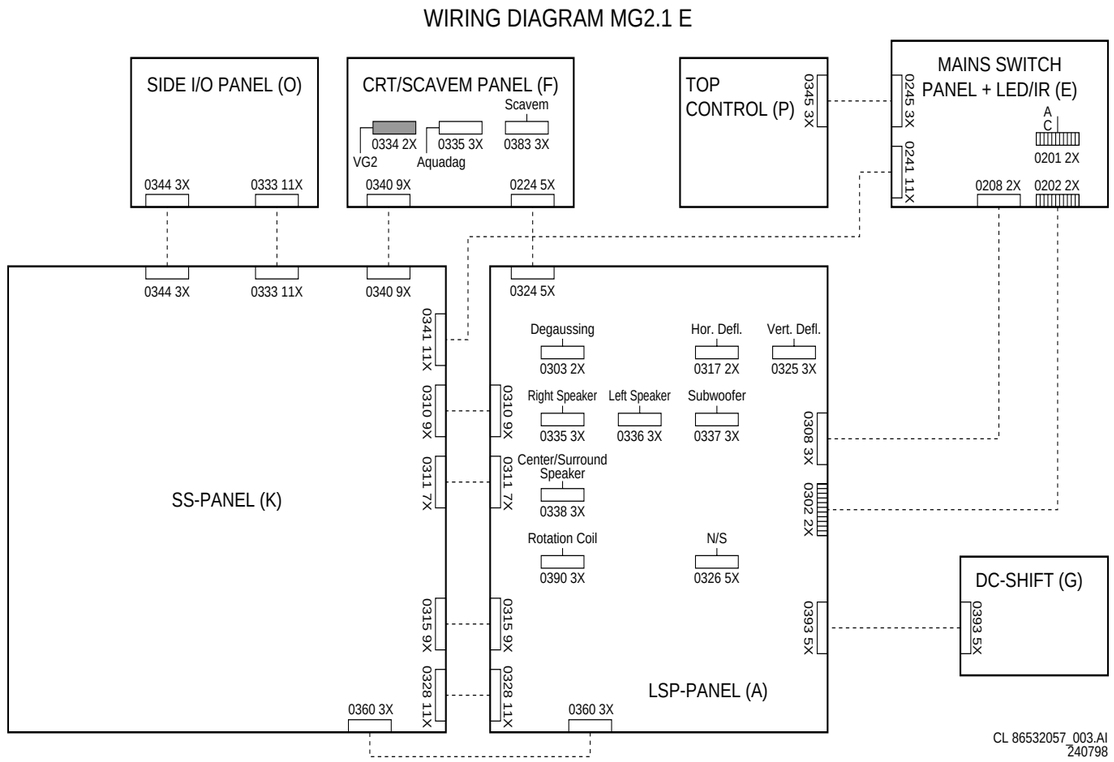

E MAINS SWITCH PANEL (PARTLY)
V - MAINS
0201
1051
0202
MAINS SWITCH
7010
50/60Hz SENSING 7010
0241
A1 SUPPLY
0302
5003
1052
H6.3AT
3506
3507
(2 x PTC)
DEGAUSSING COIL
0303
RS
RP
1010
7020
7011-7014
ACTIVATING CIRCUIT
+5-STANDBY
0310
+5V2
+5V-STANDBY
+8V6
+33V
STANDBY
+16V
1053
E3.15AT
5101
6101
DF08M
P1
2100
3110
7100
7101-7102
CONTROL CIRCUIT
L5
7102
STP3NA60
STANDBY-SUPPLY
6107
BYV27-200
P4
6111
IN5822
2104
6110
B2X79
-C6V8
9000
6109
+5V-STANDBY
VREG
3113
3114
7104
TCDT 1102G
P3
+5V STANDBY
7000
7001
ACTIVATING CIRCUIT
STBY
1002
6514
GBU4J
5550
P5
6218
PBV28-200/20
1220
T5A
6220
PB229X-200
3222
P12
+Vs
1221
T4A
6219
PBV28-200/20
3224
P13
-Vs
MAIN - SUPPLY
7520
MC44603
P7
7540
1201
T5A
6221
PB229X-200
P14
+16
CONTROL OUTPUT
P8
3524
Vcc
3527
P6
6525
7213
L78080P
2222
P15
+8V6
OSC
P10
7212
MC34063A
DC/DC CONVERTOR
P16
P17
5227
2228
P18
+5V2
CURRENT SENSE
P9
6567
BY229X-800
2234
P19
+VBAT
3566
VOLTAGE FEEDBACK
P11
3539
7556
TCDT1102G
V REG
3569
3567
P20
+33V
3555
VBAT ADJ
3559
7555
TL431CLP
HOT GROUND
(HOT)
(COLD)
TO VIDEO AUDIO CONTROL BLOCK DIAGRAM
TO 0224 F CRT PANEL
TO 0315 K6 SSP PANEL
TO 0311 K6 SSP PANEL
TO 0310 K1 SSP PANEL
A2 LINE DEFLECTION
HEATER
FBCSO
+VD
+VD - DC
+VD - DC
0324
+13VD
HEATER
+VD
+200D
2442
6441
BYD33J
3443
7437
FBCSO PROC
LOT
5430
EHT
TO CRT EHT CONN.
+VBAT
5400
FOCUS
TO CRT PANEL F
VG2
TO 0334
L1
L2
5410
L3
7421
2520 DF
L4
0315
7409
BC547B
LINE DRIVE
3455
3450
EHT - INFO
+VD
0317
LINE OUTPUT CIRCUIT
LINE DEFLECTION COIL
E/W-DRIVE
3481
7480
D
S
L7
MTP 3055 EFI
HFB+13V
LDP
L6
VD POS
3493
7484
LM358N
6460
BYV27-200
+13VD
2461
VD NEG
HDEFL - LIN
1460
6463
BYV27-200
+13V-LOT
2462
FB CSO
3609
2A
3466
EHT - INFO
L7
HEATER (FILEMENT)
3467
3456
0311
FB CSO
3463
6462
BYV27-200
-15V-LOT
2466
3462
DAC - HOP
VFB
HFB
FB CSO
HDEFL - LIN
+VD-dc
+VD+dc
+VD
HDEF-LIN
0393
A3 FRAME DEFL.
FRAME DEFLECTION
3614
7600
TDA 8177
13V - LOT
FLYBACK GENERATOR
THERMAL PROTECTION
VERTICAL DEFLECTION COIL
VD POS
VD NEG
F1
F2
3613
3610
5617
F3
0325
LV -
-15V - LOT
3611
9621
FRAME ROTATION
+13V - LOT
-13V - LOT
7440
LM358N
3745
7441
BC547B
3601
0326
DAC-HOP
F4
3440
3447
3446
7442
BC557B
FRAME - ROT +
0390
HFB +13V
FRAME ROTATION COIL
-13V - LOT
3442
3444
-15V - LOT
G DC-SHIFT
+VD
HDEFL-LIN
+VD+DC
+VD-DC
DC-SHIFT PROC
CL. 86532059_001.EPS
060898

6 Block diagrams

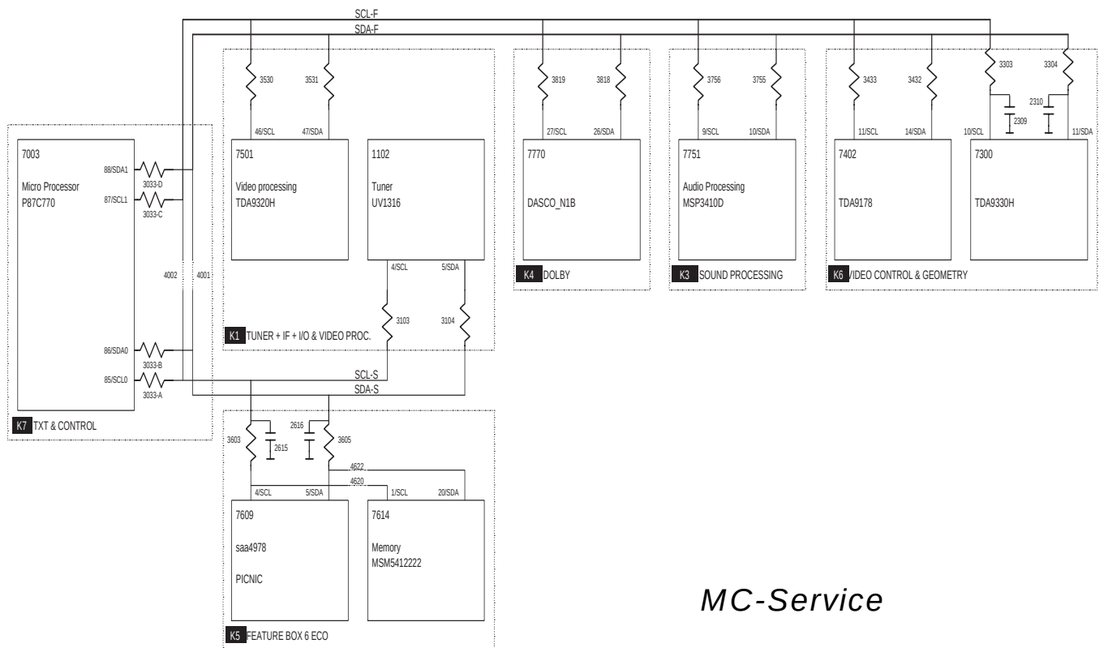


CL. 86532059_002.EPS
060898

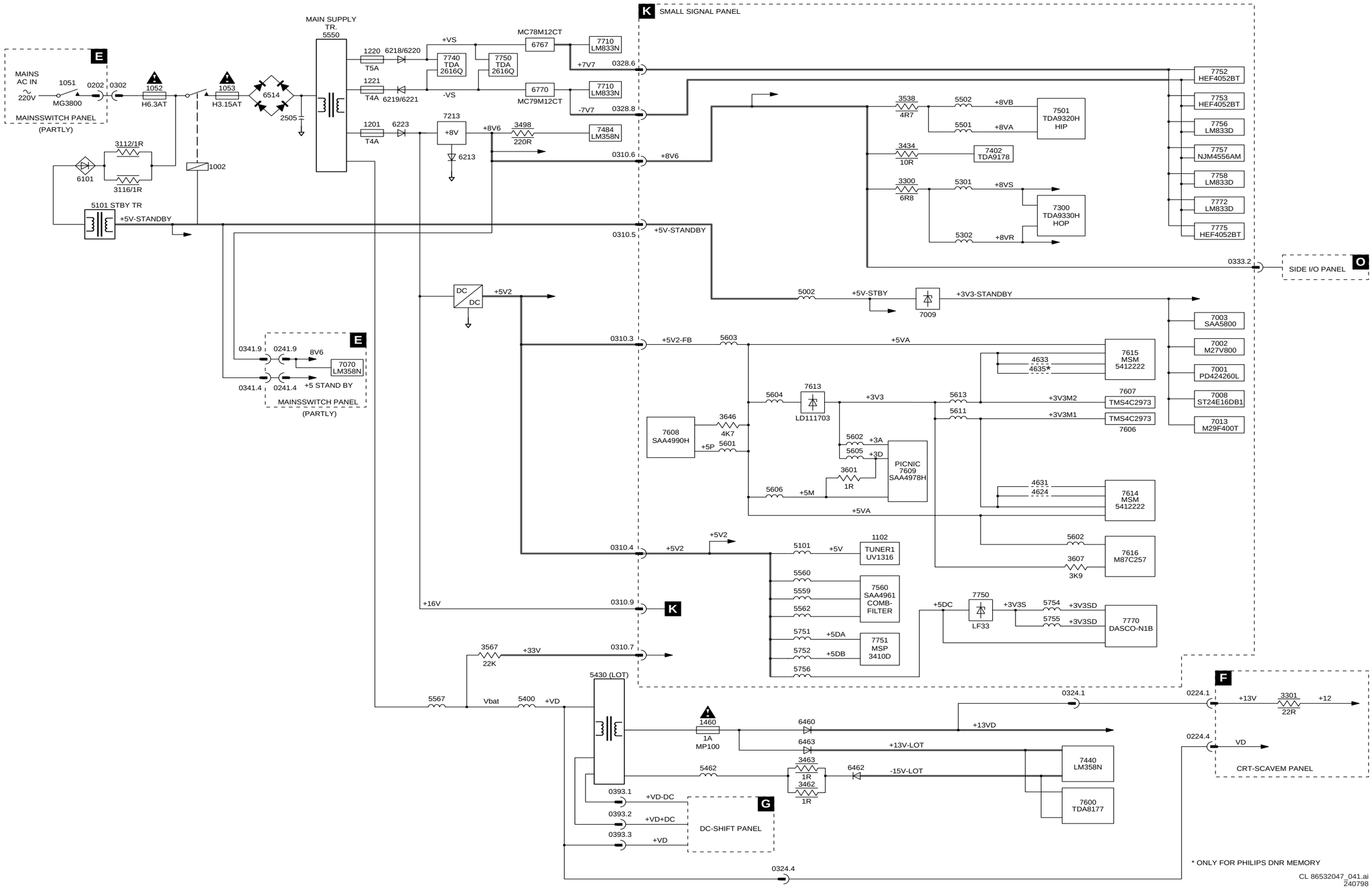
6 Block diagrams

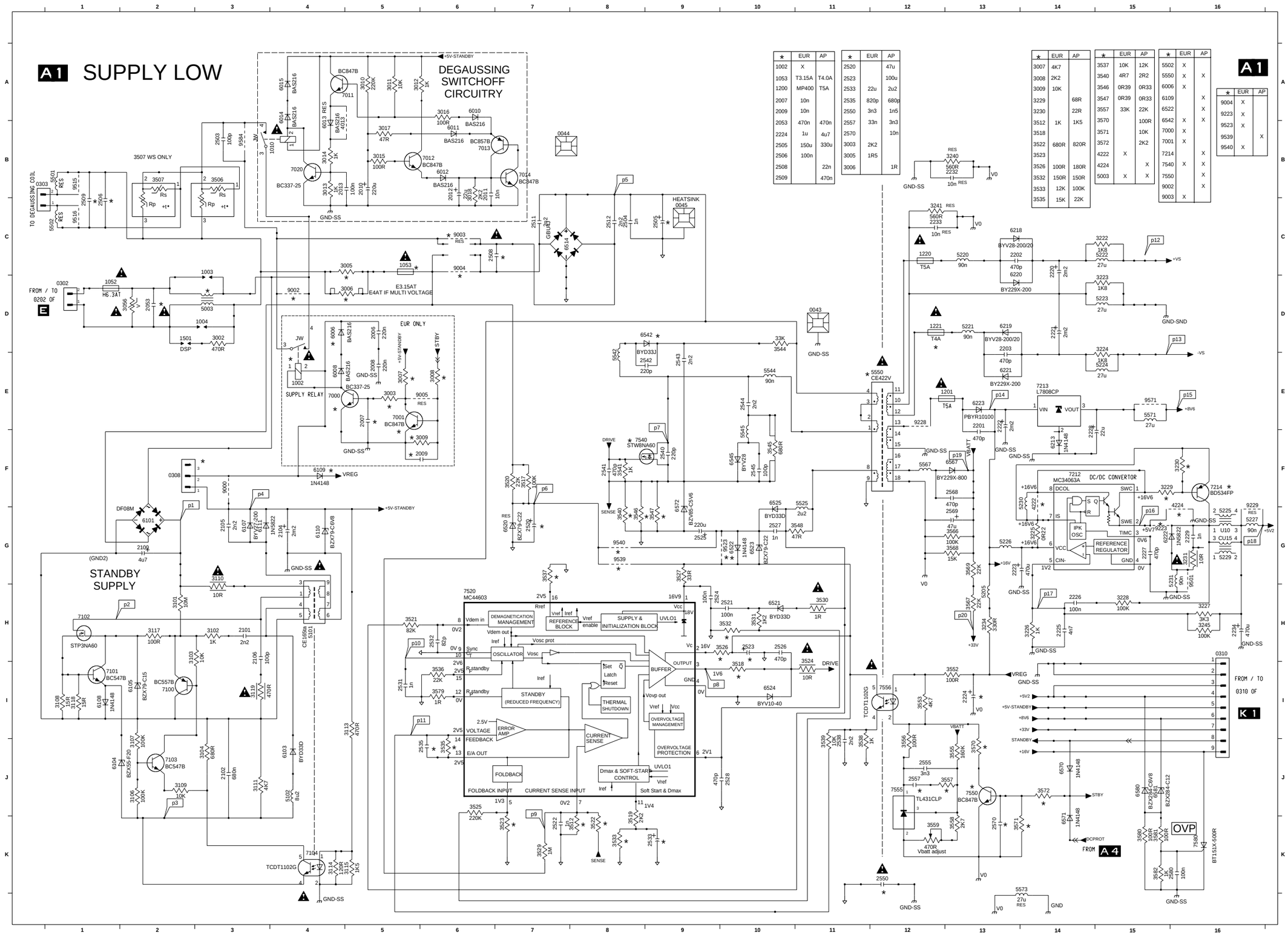


Overview I ²C-ICs



MC-Service


K SMALL SIGNAL PANEL
E
MAINS AC IN
220V
1051
MG3800
0202
0302
MAINSSWITCH PANEL
(PARTLY)
1052
H6.3AT
1053
H3.15AT
6514
2505
MAIN SUPPLY TR. 5550
1220
T5A
6218/6220
1221
T4A
6219/6221
1201
T4A
6223
+VS
-VS
7740 TDA 2616Q
7750 TDA 2616Q
7213
+8V
6213
MC78M12CT
6767
7710 LM833N
+7V7
0328.6
MC79M12CT
6770
7710 LM833N
-7V7
0328.8
7484 LM358N
3498
220R
+8V6
0310.6
3112/1R
6101
3116/1R
1002
5101 STBY TR
+5V-STANDBY
0310.5
3538
4R7
5502
+8VB
7501 TDA9320H HIP
5501
+8VA
3434
10R
7402 TDA9178
3300
6R8
5301
+8VS
7300 TDA9330H HOP
5302
+8VR
7752 HEF4052BT
7753 HEF4052BT
7756 LM833D
7757 NJM4556AM
7758 LM833D
7772 LM833D
7775 HEF4052BT
0333.2
SIDE I/O PANEL O
DC DC
+5V2
5002
+5V-STBY
7009
+3V3-STANDBY
7003 SAA5800
7002 M27V800
7001 PD424260L
7008 ST24E16DB1
7013 M29F400T
0310.3
+5V2-FB
5603
+5VA
7615 MSM 5412222
4633
4635*
5604
7613
LD111703
+3V3
5613
+3V3M2
7607
TMS4C2973
5611
+3V3M1
TMS4C2973
7606
7608 SAA4990H
3646
4K7
+5P
5601
5602
+3A
5605
+3D
PICNIC 7609 SAA4978H
3601
1R
5606
+5M
+5VA
4631
4624
7614 MSM 5412222
5602
7616 M87C257
3607
3K9
0310.4
+5V2
1102
TUNER1 UV1316
5101
+5V
5560
5559
5562
7560 SAA4961 COMB-FILTER
5751
+5DA
5752
+5DB
7751 MSP 3410D
5756
+16V
0310.9
K
+5DC
7750
LF33
+3V3S
5754
+3V3SD
5755
+3V3SD
7770 DASCO-N1B
3567
22K
+33V
0310.7
5430 (LOT)
5567
Vbat
5400
+VD
1460
1A
MP100
6460
6463
+13V-LOT
3463
1R
3462
1R
5462
6462
-15V-LOT
7440 LM358N
7600 TDA8177
0324.1
+13VD
0224.1
+13V
3301
22R
+12
0224.4
VD
CRT-SCAVEM PANEL
F
0393.1
+VD-DC
0393.2
+VD+DC
0393.3
+VD
G
DC-SHIFT PANEL
0324.4
0341.9
0241.9
8V6
7070 LM358N
0341.4
0241.4
+5 STAND BY
MAINSSWITCH PANEL
(PARTLY)
E
* ONLY FOR PHILIPS DNR MEMORY
CL 86532047_041.ai
240798



*	EUR	AP
1002	X	
1053	T3.15A	T4.0A
1200	MP400	T5A
2007	10n	
2009	10n	
2053	470n	470n
2224	1u	4u7
2505	150u	330u
2506	100n	
2508		22n
2509		470n

*	EUR	AP
2520		47u
2523		100u
2533	22u	2u2
2535	820p	680p
2550	3n3	1n5
2557	33n	3n3
2570		10n
3003	2K2	
3005	1R5	
3006		1R

*	EUR	AP
3007	4K7	
3008	2K2	
3009	10K	
3229		68R
3230		22R
3512	1K	1K5
3518		
3522	680R	820R
3523		
3526	100R	180R
3532	150R	150R
3533	12K	100K
3535	15K	22K

*	EUR	AP
3537	10K	12K
3540	4R7	2R2
3546	0R39	0R33
3547	0R39	0R33
3557	33K	22K
3570		100R
3571		10K
3572		2K2
4222	X	
4224		X
5003	X	X

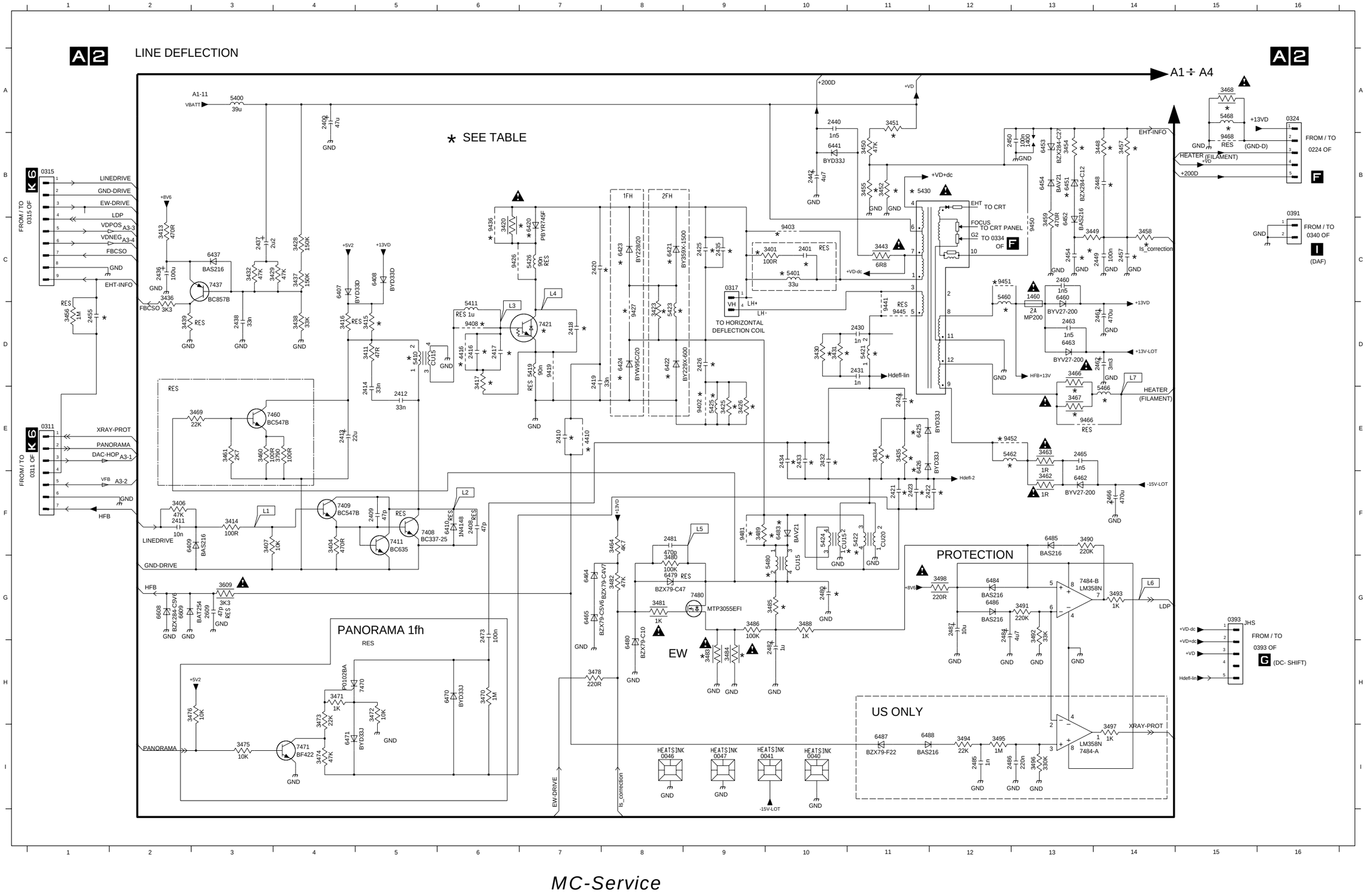
*	EUR	AP
5502	X	
5550	X	X
6006	X	
6109		X
6522		X
6542	X	X
7000	X	
7001	X	
7214		X
7540	X	X
7550		X
9002		X
9003	X	

A1

*	EUR	AP
9004	X	
9223	X	
9523	X	
9539		X
9540	X	

0043 D11	3114 K4	6110 G4
0044 B7	3115 K5	6111 G3
0045 C9	3117 H2	6213 F14
0302 D1	3118 I1	6218 C13
0303 B1	3119 I3	6219 D13
0308 F2	3222 C15	6220 D13
0310 H16	3223 D15	6221 E13
1002 E4	3224 D15	6222 G15
1003 C3	3225 G14	6223 E13
1004 D3	3226 H14	6514 C7
1010 B4	3227 H16	6520 G7
1052 D1	3228 H15	6521 H10
1053 C5	3229 F15	6522 G10
1201 E13	3230 F16	6523 G10
1220 C12	3231 G16	6524 I10
1221 D12	3234 H13	6525 F10
1501 D2	3240 B13	6542 D9
2006 D5	3241 C12	6545 F10
2007 E5	3245 H16	6567 F13
2008 E5	3506 B3	6570 J14
2009 F6	3507 B2	6571 K14
2010 B5	3512 K8	6572 F9
2011 B6	3517 F7	6580 J15
2012 B6	3518 I10	6581 J15
2013 B4	3519 K8	7000 E4
2053 D2	3520 F7	7001 E5
2100 G2	3521 H5	7011 A5
2101 H3	3522 K8	7012 B6
2102 J3	3523 K7	7013 B6
2104 G4	3524 I11	7014 B7
2105 G3	3525 J6	7020 B4
2106 H3	3526 H10	7100 I2
2201 E13	3527 G9	7101 I1
2202 C13	3529 K7	7102 H1
2203 D13	3530 H11	7103 J2
2220 C14	3531 H10	7104 K4
2221 D14	3532 H10	7212 F14
2222 E13	3533 K8	7213 E14
2223 G13	3535 J6	7214 F16
2224 I13	3536 I6	7520 H6
2225 H14	3537 G7	7540 F8
2226 H14	3538 J11	7550 J13
2227 G15	3539 J11	7555 J12
2228 F14	3540 G8	7556 I12
2229 G16	3541 F8	7580 K16
2232 B13	3544 D10	9000 F3
2233 C12	3545 F10	9002 D4
2234 H16	3546 G8	9003 C6
2503 B3	3547 G9	9004 C6
2504 C8	3548 G11	9005 E6
2505 C9	3552 I13	9223 G15
2506 C1	3553 I12	9228 E12
2508 C6	3555 J13	9229 G16
2509 C1	3556 J12	9501 G16
2511 C7	3557 J13	9515 B1
2512 C8	3558 K13	9516 C1
2520 G7	3559 K12	9523 G10
2521 H10	3566 G13	9539 G8
2522 K7	3567 H13	9540 G8
2523 H10	3568 G13	9571 E15
2524 H9	3569 G13	9584 B3
2525 G9	3570 J13	
2526 H10	3571 K13	
2527 G10	3572 J14	
2528 J10	3579 I6	
2531 I5	3580 K15	
2532 H6	3581 K15	
2533 K9	3582 K15	
2535 J6	4013 B4	
2538 J11	4222 F14	
2540 F9	4224 G16	
2541 F8	5003 D3	
2542 E9	5101 H4	
2543 E9	5102 J4	
2544 E10	5205 H13	
2545 F10	5220 C13	
2550 K12	5221 D13	
2555 J12	5222 C15	
2557 J12	5223 D15	
2568 F13	5224 E15	
2569 G13	5225 G16	
2570 K13	5226 G13	
2580 K16	5227 G16	
3002 D3	5229 G16	
3003 E5	5230 F14	
3005 C5	5231 G16	
3006 D5	5501 B1	
3007 E5	5502 C1	
3008 E6	5525 F11	
3009 F6	5542 E8	
3010 A5	5544 E10	
3011 A5	5545 F10	
3012 A5	5550 E12	
3013 B4	5567 F12	
3014 B4	5571 E15	
3015 B5	5573 K14	
3016 A6	6006 D4	
3017 B5	6008 E4	
3018 B6	6010 A6	
3056 D2	6011 B6	
3101 H2	6012 B6	
3102 H3	6013 B4	
3103 H2	6014 A4	
3104 J3	6015 A4	
3106 J2	6101 G2	
3107 J2	6103 J4	
3108 I1	6104 J1	
3109 J2	6105 I2	
3110 G3	6107 G3	
3111 J3	6108 I1	
3113 I5	6109 F4	

0040 I10 0324 A16 2408 F6 2416 D6 2423 F11 2433 E10 2442 B10 2460 C13 2480 G10 2609 G3 3414 F3 3426 E9 3435 E11 3449 C13 3457 B14 3464 F8 3472 H5 3481 G8 3489 F9 3496 I13 5400 A3 5423 D8 5466 E14 6420 C7 6437 C3 6462 F13 6480 H8 6608 G2 7460 E3 9403 C10 9445 D11
0041 I9 0391 B16 2409 F5 2417 D6 2424 E11 2434 E10 2448 B14 2461 D14 2481 F8 3401 C10 3415 D5 3428 C4 3436 C2 3450 B11 3458 C14 3466 D13 3473 H4 3482 G8 3490 F13 3497 I14 5401 C10 5424 F10 5468 A15 6421 C8 6441 B10 6463 D13 6483 F10 6609 G2 7470 H5 9408 D6 9450 C13
0046 I8 0393 G15 2410 E7 2418 D7 2425 C9 2435 C9 2449 C14 2462 D14 2482 H10 3404 F4 3416 D4 3429 C4 3437 C4 3451 A11 3459 C13 3467 E13 3474 I4 3483 H9 3491 G13 3498 G12 5410 D5 5425 E9 5480 G10 6422 D8 6451 B13 6464 G7 6484 G12 7408 F5 7471 I4 9419 D7 9451 C12
0047 I9 1400 B13 2411 F2 2419 D7 2426 D9 2436 C2 2450 B13 2463 D13 2484 G12 3406 F2 3417 D6 3430 D10 3438 D4 3452 B11 3460 E3 3468 A15 3475 I3 3484 H9 3492 G13 3609 G3 5411 D6 5426 C7 6407 C4 6423 C8 6452 C13 6454 B13 6471 I4 6487 I11 7421 D7 7484-B G13 9436 C6 9468 B15
0311 E1 1460 C13 2412 E5 2420 C7 2430 D11 2437 C3 2454 C13 2465 E13 2485 I12 3407 F3 3420 C6 3431 D10 3439 D2 3454 B13 3461 E3 3469 E3 3476 H3 3485 G10 3493 G14 3790 E4 5419 D7 5430 B11 6408 C5 6424 D8 6453 B13 6470 H6 6486 G12 7411 F5 7484-A I13 9427 D8 9466 E13
0315 B1 2400 A4 2413 E4 2421 F11 2431 D11 2438 D3 2455 D1 2466 F14 2486 I13 3411 D5 3423 D8 3432 C3 3443 C11 3455 B11 3462 F13 3470 H6 3478 H7 3486 G9 3494 I12 4410 E7 5421 D11 5460 C12 6409 F2 6425 E11 6454 B13 6471 I4 6488 I11 7421 D7 7484-B G13 9436 C6 9468 B15
0317 C9 2401 C10 2414 E5 2422 F12 2432 E10 2440 A10 2457 C14 2473 G6 2487 G12 3413 C2 3425 E9 3434 E11 3448 B14 3456 D1 3463 E13 3471 H4 3480 G8 3488 G10 3495 I12 4416 D6 5422 F11 5462 E12 6410 F6 6426 E11 6460 C13 6479 G8 6488 I11 7437 C3 9402 E9 9441 D11 9481 F9

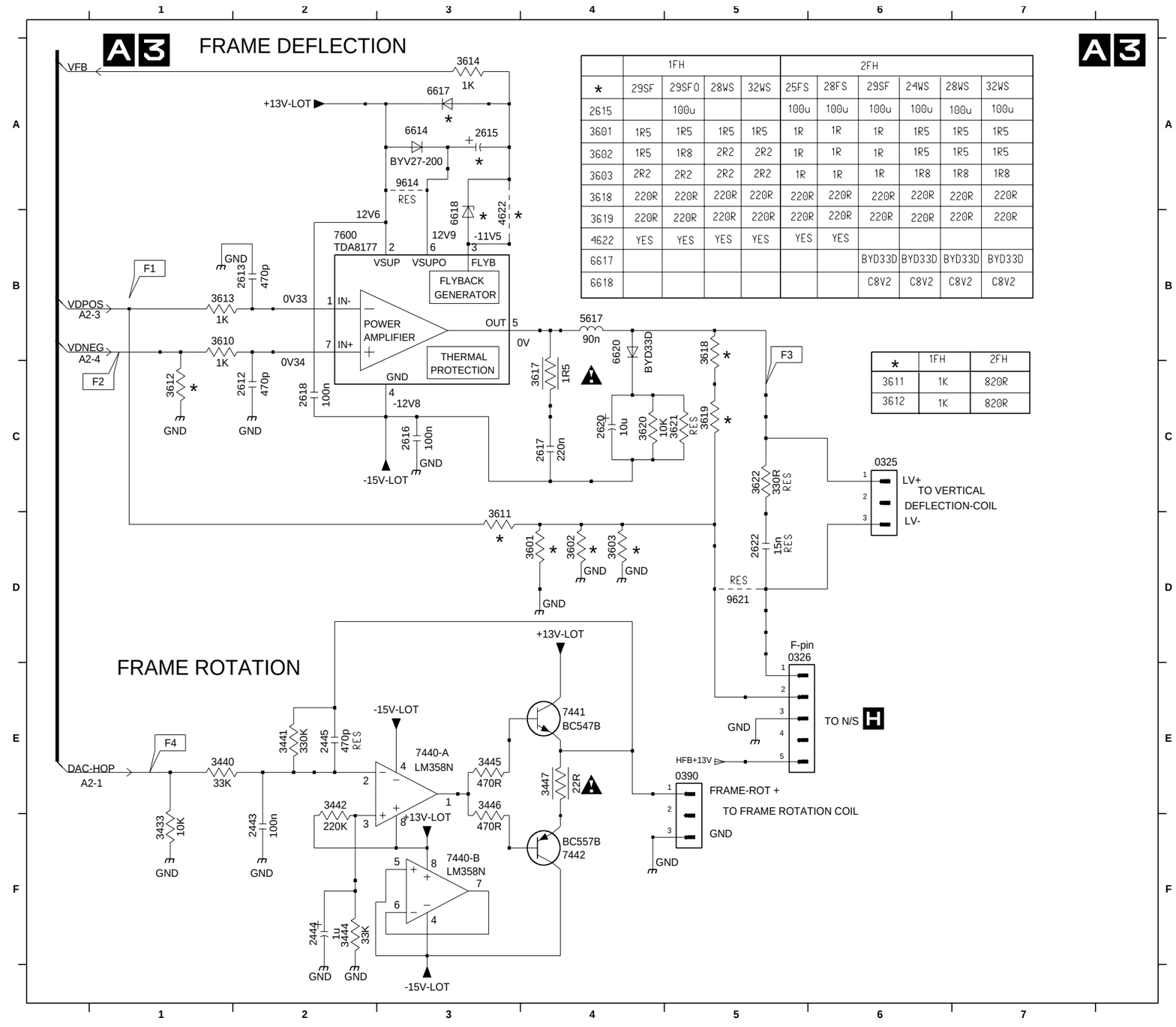


CRT-size related

*	1FH 29SF	29SFO	28WS	32WS	2FH 25FS	28FS	29SF	24WS	28WS	32WS
2401										
2420	2n7	2n7	3n3	2n2	1n2	1n2	1n	1n2	1n	1n
2421					470n	470n	560n			
2422								1u2	1u2	1u2
2423	470n	470n	470n	470n						
2425	15n	12n	15n	15n			11n	11n	11n	11n
2426	27n	27n	18n	22n	27n	27n	24n	27n	27n	27n
2432	560n		560n	680n						
2433					390n	470n	560n	390n	390n	430n
2434		470n								
2435					9n1	10n				
2448	10n	10n	4n7	1n5	3n3	1n5	22n	4n7	22n	22n
2454							100n		100n	100n
2457	47n	47n	47n	47n	33n	33n	100n	33n	100n	100n
3401										
3415	33R	33R	33R	33R	22R	22R	18R	18R	18R	18R
3448	100k	100k	100k	100k	10K	33K	100K	100K	100K	100K
3449	47k	47k	47k	47k	33k	220k	47k	100K	47K	47K
3451	27k	47k	27k	27k	39k	39k	27k	27k	27k	27k
3452	22k	27k	22k	22k	27k	27k	22k	22k	22k	22k
3454	10R	10R	10R	10R	10R	10R	47K	10R	47K	47K
3455	220k	220k	220k	220k			220k	220k	220k	220k
3457	560k	560k	560k	560k	1M	1M	680k	680k	560k	680k
3458	220k	220k	270k	270k	150k	100K	100K	100K	100K	100K
3467	15R	3R3	15R	15R	1R	1R				
3483	4R7	5R6	4R7	4R7	4R7	3R3	4R7	4R7	4R7	4R7
3484	4R7	4R7	4R7	4R7	4R7	4R7	4R7	10R	10R	10R
3485	7M5	5M6	7M5	7M5	5M6	5M6	7M5	5M6	5M6	7M5
5401										
5421	X	X	X	X	X	X	X	X	X	X
5422							X	X	X	X
5424	X	X	X	X	X	X				
5430	X	X	X	X	X	X	X	X	X	X
6451	C12	C12	C10	C10	C12	C12	C12	C10	C10	C10
9403	X	X	X	X	X	X	X	X	X	X

non CRT-size related

*	1FH	2FH
2410		4n7
2416		100n
2417		100n
2418		220p
2424	1u	
2455	1n5	
2457	47n	33n
2480	4u7	2u2
3417	47R	10R
3420		47R
3423		6R8
3425		10R
3426		10R
3430	3K3	1k
3431	3K3	1k
3434	33K	
3435	33k	
3466	4R7	1R
3468		150R
3489		33R
4410	X	
4416	X	
5410	X	X
5423		X
5425		X
5460		X
5462		X
5466	X	X
5468	X	X
5480	X	X
6420		X
6421		X
6422		X
6423	X	
6424	X	
6425	X	
6426	X	
6483		X
7421	2508AF	2520DF
9402	X	
9408	X	X
9427	X	
9436	X	
9451	X	
9452	X	
9481	X	

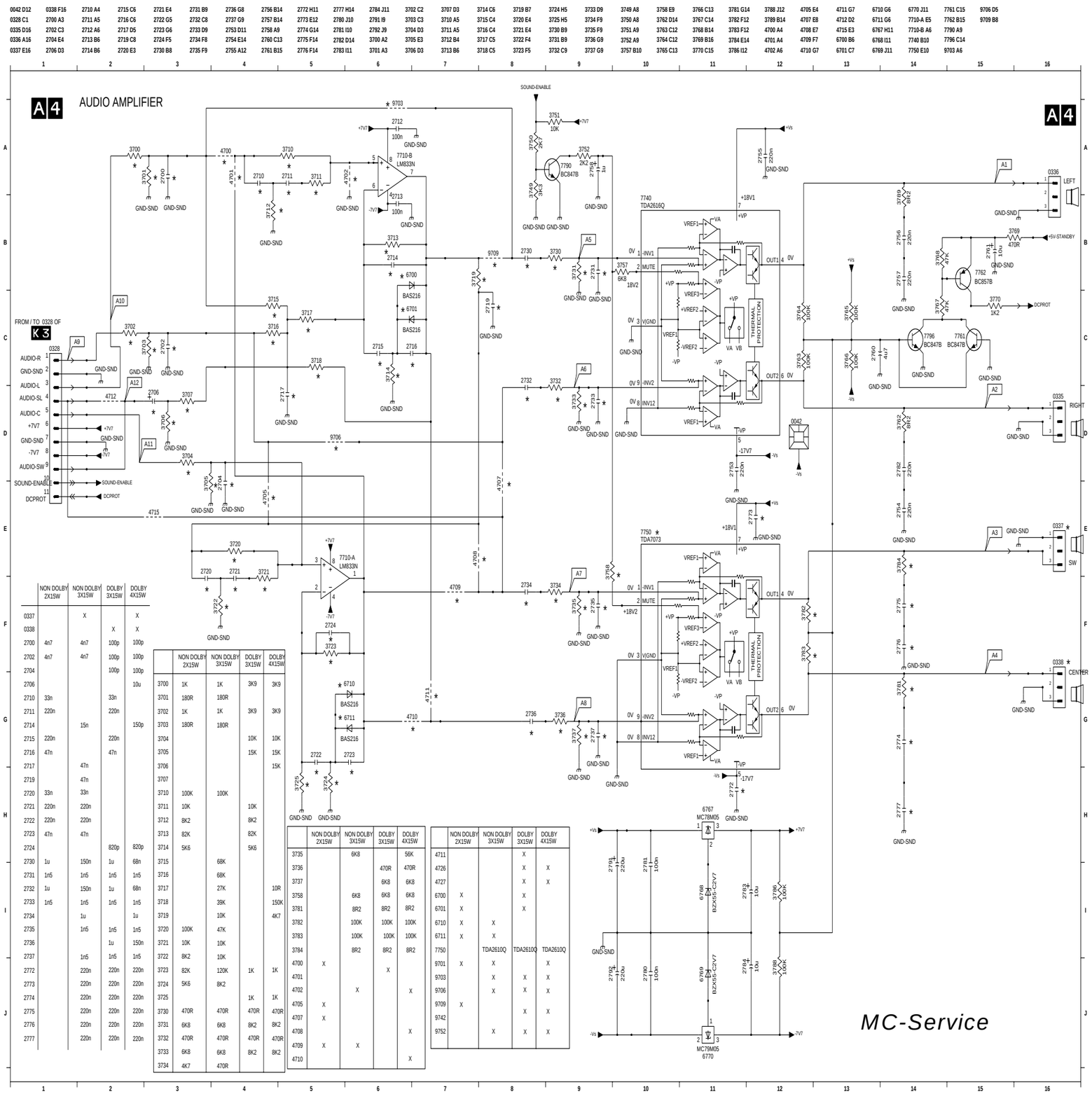


*	1FH 29SF	29SFO	28WS	32WS	2FH 25FS	28FS	29SF	24WS	28WS	32WS
2615		100u			100u	100u	100u	100u	100u	100u
3601	1R5	1R5	1R5	1R5	1R	1R	1R	1R5	1R5	1R5
3602	1R5	1R8	2R2	2R2	1R	1R	1R	1R5	1R5	1R5
3603	2R2	2R2	2R2	2R2	1R	1R	1R	1R8	1R8	1R8
3618	220R	220R	220R	220R	220R	220R	220R	220R	220R	220R
3619	220R	220R	220R	220R	220R	220R	220R	220R	220R	220R
4622	YES	YES	YES	YES	YES	YES				
6617							BYD33D	BYD33D	BYD33D	BYD33D
6618							C8V2	C8V2	C8V2	C8V2

*	1FH	2FH
3611	1K	820R
3612	1K	820R

0325 C6
0326 D5
0390 E5
2443 F2
2444 F2
2445 E2
2612 C2
2613 B2
2615 A3
2616 C3
2617 C4
2618 C2
2620 C4
2622 D5
3433 F1
3440 E1
3441 E2
3442 E2
3444 F2
3445 E3
3446 E3
3447 E4
3601 D4
3602 D4
3603 D4
3610 B1
3611 D3
3612 C1
3613 B1
3614 A3
3617 C4
3618 B5
3619 C5
3620 C4
3621 C5
3622 C5
4622 B3
5617 B4
6614 A3
6617 A3
6618 B3
6620 B4
7440-A E3
7440-B F3
7441 E4
7442 F4
7600 B2
9614 A3
9621 D5

7 Electrical diagrams and print lay-outs



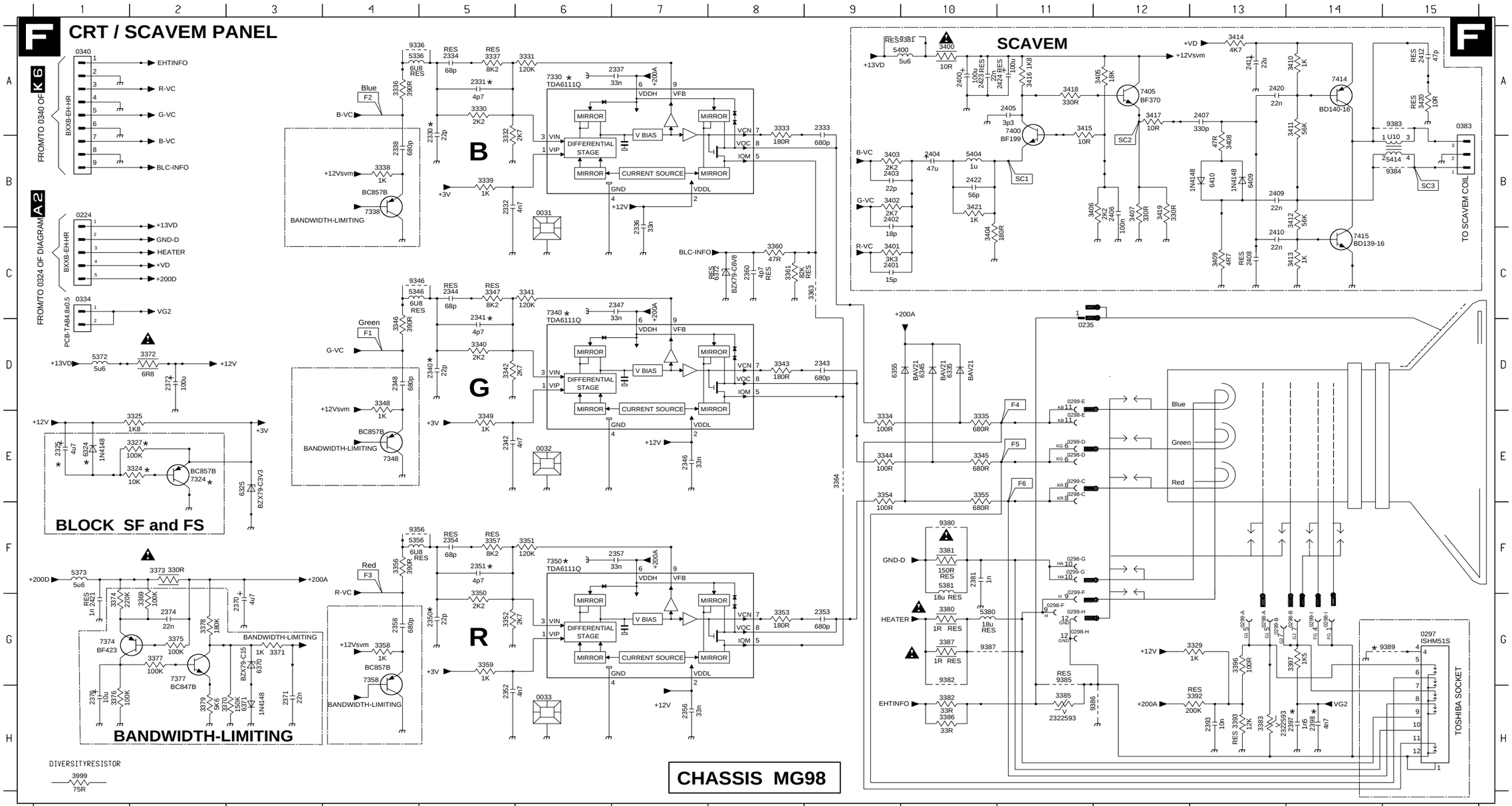
	NON DOLBY 2X15W	NON DOLBY 3X15W	DOLBY 3X15W	DOLBY 4X15W
0337		X		X
0338			X	X
2700	4n7	4n7	100p	100p
2702	4n7	4n7	100p	100p
2704			100p	100p
2706				10u
2710	33n		33n	
2711	220n		220n	
2714		15n		150p
2715	220n		220n	
2716	47n		47n	
2717		47n		
2719		47n		
2720	33n	33n		
2721	220n	220n		
2722	220n	220n		
2723	47n	47n		
2724			820p	820p
2730	1u	150n	1u	68n
2731	1n5	1n5	1n5	1n5
2732	1u	150n	1u	68n
2733	1n5	1n5	1n5	1n5
2734		1u	1u	
2735		1n5	1n5	1n5
2736			1u	150n
2737		1n5	1n5	1n5
2772		220n	220n	220n
2773		220n	220n	220n
2774		220n	220n	220n
2775		220n	220n	220n
2776		220n	220n	220n
2777		220n	220n	220n

	NON DOLBY 2X15W	NON DOLBY 3X15W	DOLBY 3X15W	DOLBY 4X15W
3700	1K	1K	3K9	3K9
3701	180R	180R		
3702	1K	1K	3K9	3K9
3703	180R	180R		
3704			10K	10K
3705			15K	15K
3706				15K
3707				
3710	100K	100K		
3711	10K		10K	
3712	8K2		8K2	
3713	82K		82K	
3714	5K6		5K6	
3715		68K		
3716		68K		
3717		27K		10R
3718		39K		150K
3719		10K		4K7
3720	100K	47K		
3721	10K	10K		
3722	8K2	10K		
3723	82K	120K	1K	1K
3724	5K6	8K2		
3725			1K	1K
3730	470R	470R	470R	470R
3731	6K8	6K8	8K2	8K2
3732	470R	470R	470R	470R
3733	6K8	6K8	8K2	8K2
3734	4K7	470R		

	NON DOLBY 2X15W	NON DOLBY 3X15W	DOLBY 3X15W	DOLBY 4X15W
3735		6K8		56K
3736			470R	470R
3737			6K8	6K8
3758		6K8	6K8	6K8
3781		8R2	8R2	8R2
3782		100K	100K	100K
3783		100K	100K	100K
3784		8R2	8R2	8R2
4700	X		X	
4701				
4702		X		X
4705	X			
4707	X			
4708				X
4709	X	X		
4710				X

	NON DOLBY 2X15W	NON DOLBY 3X15W	DOLBY 3X15W	DOLBY 4X15W
4711			X	
4726			X	X
4727			X	X
6700	X		X	
6701	X		X	
6710	X	X		
6711	X	X		
7750		TDA2610Q	TDA2610Q	TDA2610Q
9701	X	X		X
9703		X	X	X
9706		X	X	X
9709	X			
9742			X	X
9752		X	X	X

0031 B6 0298-F G11 0299-H G11 2336 B7 2350 G5 2372 D2 2404 B10 2422 B10 3334 E9 3345 F10 3356 F4 3372 D2 3383 H13 3403 B9 3414 A13 5356 F4 6345 D10 7348 E4 9356 F4
0032 C6 0298-G F11 0299-I G14 2337 A7 2351 F6 2374 G2 2405 A10 2423 A10 3335 E10 3346 D4 3357 F5 3373 F2 3384 B11 3404 B11 3415 A11 5372 D1 6355 D9 7356 F6 9380 F10
0033 H6 0298-H G11 0334 C1 2338 B4 2352 H6 2374 H1 2406 B11 2424 A10 3336 A4 3347 C5 3358 G5 3374 G1 3385 H10 3405 A11 3416 A11 5373 F1 6370 C2 7358 C4 9381 A9
0224 B1 0298-I G14 0340 A1 2340 D5 2353 G9 2381 F10 2407 A13 3254 F2 3337 A5 3348 D4 3359 G5 3375 G2 3387 G10 3406 B12 3417 A12 5380 G10 6371 H2 7374 G1 9382 G10
0235 D11 0299-A G13 0383 A15 2341 D5 2354 F5 2393 H13 2408 C13 3325 E5 3338 B4 3349 E5 3360 C8 3376 H1 3392 H13 3407 B12 3418 A11 5381 F10 6372 C8 7377 D2 9383 A15
0297 C15 0299-B G13 2325 E1 2342 E5 2356 H7 2397 H14 2409 B13 3327 F2 3339 B5 3350 G5 3377 D2 3393 H13 3408 B12 3419 B12 5400 A9 6409 B12 7409 A11 9384 B15
0298-A G13 0299-C F17 2330 A5 2343 D9 2357 F7 2398 H14 2410 C13 3329 G13 3340 D5 3351 F6 3363 C9 3378 G5 3396 G13 3409 C13 3420 A15 5404 B10 6410 B13 7405 A12 9385 G11
0298-B G14 0299-D E11 2331 A5 2344 C5 2358 G4 2400 A10 2411 A13 3330 A5 3341 C6 3352 C6 3364 F5 3379 H2 3397 G14 3410 A14 3421 B10 5414 B15 7324 E2 7414 A14 9386 H12
0298-C F11 0299-E D11 2332 B6 2345 E7 2360 C8 2401 C9 2412 A15 3331 A6 3342 D6 3353 G8 3365 C9 3380 C10 3400 A9 3411 A14 3980 H1 5224 E1 7330 A6 9387 C10
0298-D E11 0299-F G11 2333 A9 2347 C7 2370 G3 2402 B9 2420 A13 3332 A5 3343 D8 3354 G9 3370 H5 3381 F10 3401 C9 3412 C14 5336 A4 6325 E3 7338 B4 9336 A4 9388 G15
0298-E E11 0299-G F11 2334 A5 2348 D4 2371 H3 2403 B9 2421 G1 3333 A8 3344 E9 3355 E10 3371 G3 3382 H10 3402 B9 3413 C14 5346 C4 6335 D10 7340 C6 9346 C4



	FAKE DAF	FSQ-TUBES	NON-DAF	NON-POWER	POWER	RESERVED	SCAVEM	SF-TUBES	TDA6101	TDA6111	TOSHIBA	Diversitiely Resistor
												3998
3104-328-00321		X	X		X				X			150R
3104-328-00341			X	X			X	X	X			180R
3104-328-00361	X			X			X	X	X			220R
3104-328-00381			X	X			X	X		X		270R
3104-328-00401	X			X			X	X		X		330R
3104-328-01381				X			X	X	X		X	470R

DAF

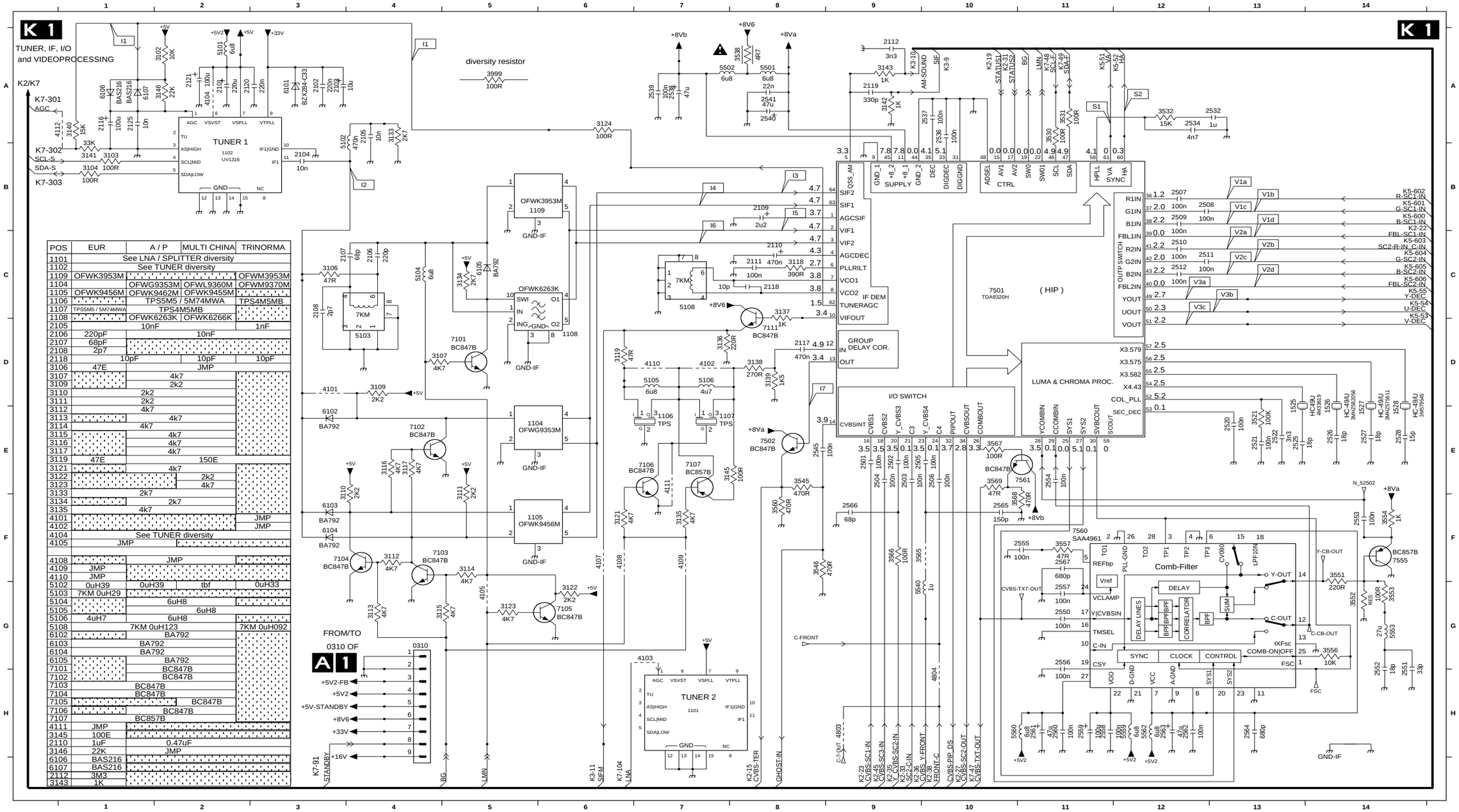
	Fake DAF	non DAF	real DAF
2397	1n5	-	1n5
2398	-	4n7	-

FQS		
	FQS	non FQS
2325	10u	10u
3324	10K	10K
3327	100K	100K
6324	1N4148	1N4148
7324	BC857B	BC857B

TDA		
	TDA6111	TDA6101
2330	22p	15p
2331	1p8	1p8
2340	22p	15p
2341	1p8	1p8
2350	22p	15p
2351	2p7	2p7
7330	TDA6111	TDA6101
7340	TDA6111	TDA6101
7350	TDA6111	TDA6101

MC-Service

0310 G4	1108 C5	2102 A3	2109 B8	2119 A9	2504 E9	2511 C12	2527 E14	2539 A7	2553 F14	2560 H11	2567 F11	3110 E3	3117 E4	3133 A4	3140 A1	3530 A11	3552 G14	3566 F9	4103 G7	4111 E7	5104 C4	5553 G14	6104 F3	7104 F4	7555 F14
1101 H7	1109 B5	2103 A3	2110 C8	2120 A2	2505 E9	2512 C12	2528 E14	2540 A8	2554 E11	2561 H11	3102 A2	3111 E5	3118 C8	3134 C5	3141 B1	3531 A11	3553 G14	3567 E10	4104 A2	4112 A1	5105 D7	5559 H12	6105 C5	7105 G6	7560 F11
1102 B2	1525 D13	2104 B3	2111 C8	2121 A2	2506 E10	2520 E13	2532 A13	2541 A8	2555 F11	2562 H12	3103 B1	3112 F4	3119 D6	3135 F7	3142 A9	3532 A12	3554 F14	3568 F10	4105 G5	4803 H9	5106 D7	5560 H10	6106 A1	7106 E7	7561 E10
1104 E5	1526 D14	2105 A4	2112 A9	2125 A1	2507 B12	2521 E13	2534 A12	2545 E8	2556 G11	2563 H12	3104 B1	3113 G4	3121 F6	3136 D7	3143 A9	3538 A8	3556 G14	3569 E10	4107 F6	4804 H10	5108 C7	5562 H12	6107 A1	7107 E7	
1105 F5	1527 E14	2106 C4	2116 A1	2501 E9	2508 B12	2522 E13	2536 A10	2550 G11	2557 G11	2564 H13	3106 C3	3114 F5	3122 G6	3137 C8	3145 E7	3545 E8	3557 F11	3999 A5	4108 F6	5101 A2	5501 A8	6101 A3	7101 D5	7111 D8	
1106 E7	1528 E14	2107 C3	2117 D8	2502 E9	2509 B12	2525 E13	2537 A10	2551 G14	2558 H11	2565 F10	3107 D4	3115 G4	3123 G5	3138 D8	3146 A2	3546 F8	3560 F8	4101 D3	4109 F7	5102 A3	5502 A7	6102 E3	7102 E4	7501 C10	
1107 E7	2101 A2	2108 C3	2118 C8	2503 E9	2510 C12	2526 E14	2538 A7	2552 G14	2559 H11	2566 F9	3109 D4	3116 E4	3124 A6	3139 D8	3521 E13	3551 F14	3565 F9	4102 D7	4110 D7	5103 D4	5540 G9	6103 F3	7103 F5	7502 E8	



POS	EUR	A / P	MULTI CHINA	TRINORMA
1101	See LNA / SPLITTER diversity			
1102	See TUNER diversity			
1109	OFWK3953M			OFWM3953M
1104		OFWG9353M	OFWL9360M	OFWM9370M
1105	OFWK9456M	OFWK9462M	OFWK9455M	
1106		TPS5M5 / 5M74MWA		TPS4M5MB
1107	TPS5M5 / 5M74MWA	TPS4M5MB		
1108		OFWK6263K	OFWK6266K	
2105	10nF			1nF
2106	220pF	10nF		
2107	68pF			
2108	2p7			
2118	10pF	10pF	10pF	
3106	47E	JMP		
3107	4k7			
3109	2k2			
3110	2k2			
3111	2k2			
3112	4k7			
3113	4k7			
3114	4k7			
3115	4k7			
3116	4k7			
3117	4k7			
3119	47E	150E		
3121	4k7			
3122	2k2			
3123	4k7			
3133	2k7			
3134	2k7			
3135	4k7			
4101	JMP			
4102	JMP			
4104	See TUNER diversity			
4105	JMP			
4108	JMP			
4109	JMP			
5102	0uH39	0uH39	tbf	0uH33
5103	7KM 0uH29			
5104	6uH8			
5105	6uH8			
5106	4uH7	6uH8		
5108	7KM 0uH123			7KM 0uH092
6102	BA792			
6103	BA792			
6104	BA792			
6105	BA792			
7101	BC847B			
7102	BC847B			
7103	BC847B			
7104	BC847B			
7105	BC847B			
7106	BC847B			
7107	BC857B			
4111	JMP			
3145	100E			
2110	1uF	0.47uF		
3146	22K	JMP		
6106	BAS216			
6107	BAS216			
2112	3M3			
3143	1K			

Main HIP		LOW			TOP	
Pinnr	PinName	100Hz ECO Eur	50Hz Eur	1FH AP/US	100Hz Med/Top Eur	100 Hz AP
15	INPUT	STATUS1	STATUS1	Ext1AR	STATUS1	Ext1 AR
17	INPUT	STATUS2	STATUS2	Ext2AR	STATUS2	Ext2 AR
22	OUTPUT	L'	L'	M	L'	M

POS	EUR LOW	EUR TOP	A/P MULTI	A/P NTSC KOREA	A/P NTSC TAIWAN LOW	A/P NTSC TAIWAN TOP	ARGENTINA	USA
1102	UV1316/AI-2	UV1316/AP-2	UV1316/AP-2	UV1336B/AP		UV1336B/APS	UV 1336B/AP	UV1336B/AP
1101		PS1311 / I	PS1315 / I	PS1315 / P		PS1311	PS1315 / I	

INPUT / OUTPUT

SCART 1 1201-A
SCART 2 1202-A
SCART 3 1201-B
SCART 4 1202-B
NOT FOR MG2.1E
SIDE I/O PANEL
FROM / TO 0333 OF
K1 / K7
CINCH-OUT
RIGHT
LEFT
AP-ONLY
16:9-ARFRONT
IO-BUS
OR 1K5 IF 4 SCARTS

	LOW			TOP	
PinName	100Hz ECO Eur	50Hz Eur	1FH AP/US	100Hz TOP/MED Eur	100Hz AP
P1-0			MAINS CLOCK	STATUS4	MAINS CLOCK
P1-4	I/O_CNTRL_BUS IN	I/O_CNTRL_BUS IN	16:9 ARFRONT	I/O_CNTRL_BUS IN	16:9 ARFRONT
P2-6		STATUS3	Ext2 FRONT	STATUS3	
P3-7	I/O_CNTRL_BUS OUT	I/O_CNTRL_BUS OUT	REMOTE LOCATOR	I/O_CNTRL_BUS OUT	

0333 F7 3249 F8
0381 D2 3250 F7
1200-A E1 3252 E8
1200-B E2 3253 E8
1200-C E1 3254 E4
1201-A A3 3255 E4
1201-B D3 3256 G4
1202-A A10 3257 F2
1202-B D10 3258 F1
2202 B2 3264 F3
2203 B2 3265 F4
2204 C2 3266 E8
2205 C2 3270 E11
2206 B3 3271 E11
2209 B3 3273 F11
2210 B4 3274 G11
2212 D6 4201 B6
2213 D6 4226 G6
2215 B7 4227 G6
2216 B7 4228 F6
2217 B11 4229 A5
2219 B11 4230 A5
2220 B11 4235 D12
2221 F7 6200 B1
2222 F9 6201 B1
2224 E4 6202 B1
2226 F4 6203 B1
2228 G2 6204 D2
2229 G2 6205 A4
2240 E11 6206 B4
2241 F11 6207 B4
3200 B2 6208 B5
3201 B2 6209 B5
3202 A2 6210 C3
3203 A2 6211 D3
3204 C2 6212 D3
3205 C1 6213 D3
3206 D2 6214 B6
3207 D1 6215 B6
3208 D12 6216 B6
3209 D3 6217 B6
3210 D4 6218 C7
3211 D4 6219 D7
3212 D12 6220 A11
3213 C3 6221 B11
3215 B4 6222 B11
3216 B4 6223 B12
3218 B3 6224 B12
3219 B4 6225 C10
3220 A3 6226 D10
3221 B7 6227 D11
3222 B7 6228 D10
3223 A7 6229 E4
3224 A7 6230 E4
3225 D6 6231 E4
3227 G12 6232 F4
3228 E6 6233 G3
3229 E6 6234 G1
3230 E6 6235 G1
3231 G12 6236 G2
3232 E7 6237 G2
3235 D11 6239 B10
3236 D11 6240 E12
3240 C11 6241 E12
3241 B11 6242 E11
3242 B12 6243 F11
3243 F8 6244 G11
3244 B11 6259 B2
3245 B11 7200 C2
3246 A11 7201 E6
3247 F8 7203 E9
3248 F8 7204 F8

K3

SOUND PROCESSING

K3

K1:K7

7751 MSP3410D

7753* HEF4052BT

7752 HEF4052BT

DFP

SCART Switching Facilities

DEMODULATOR

ADR interface

I2S interface

LOUDSPEAKER

HEADPHONE

IDENT

MONO

SCART 1

SCART 2

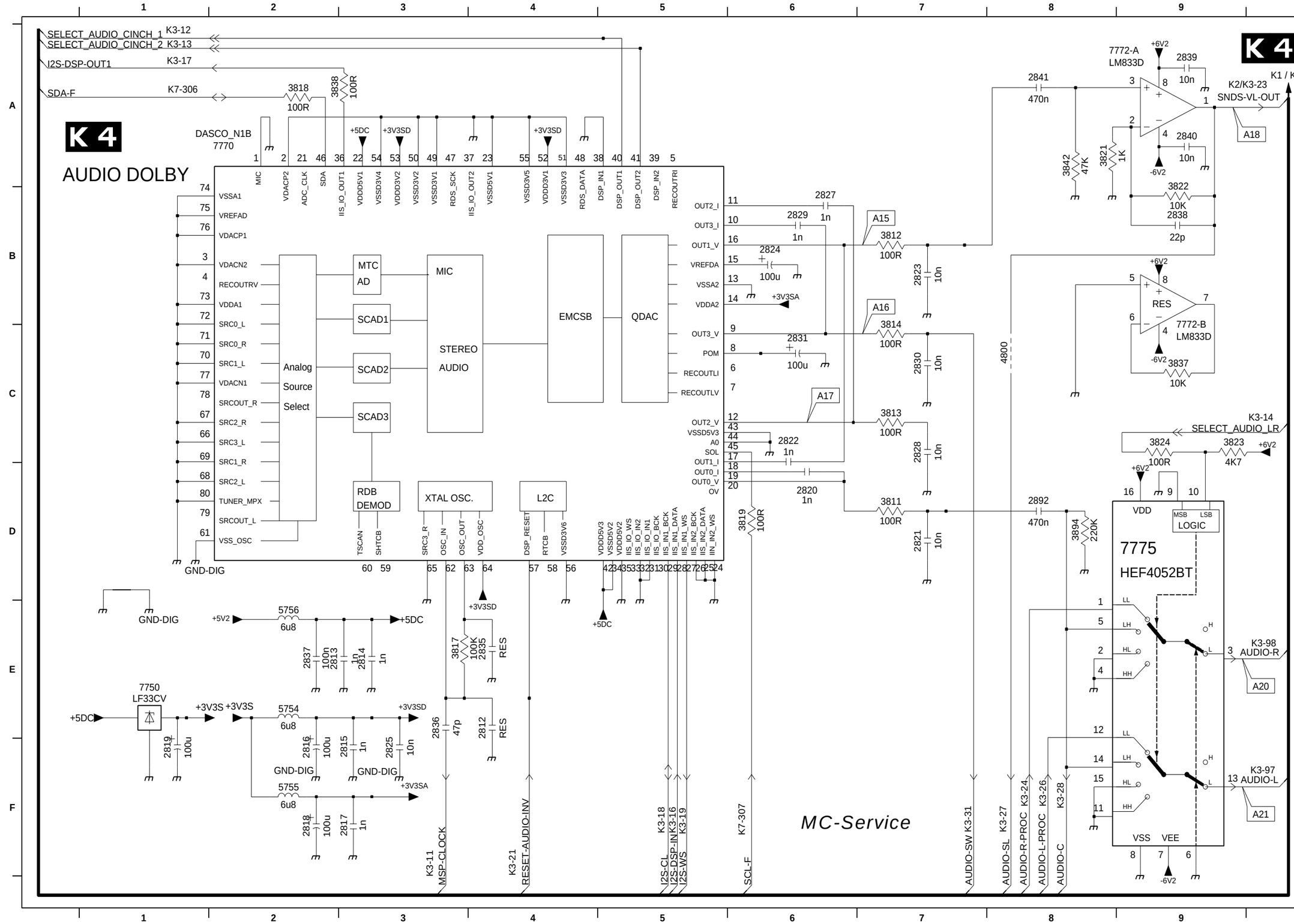
SCART 3

SCART 4

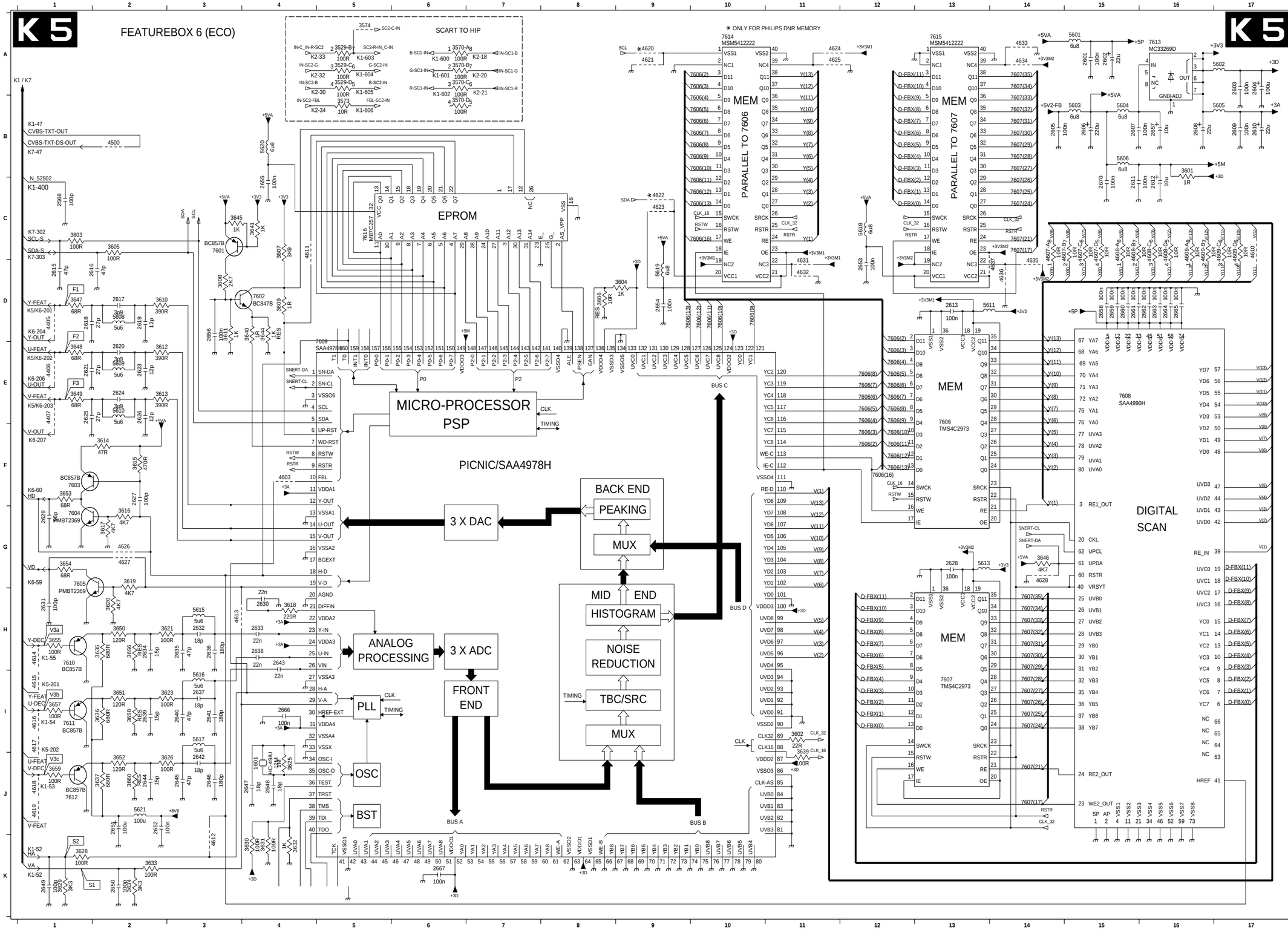
*	DOLBY	NO DOLBY	**	SC3	NO SC3
4700	RES	YES	3792	6K8	RES
4701	RES	YES	3793	6K8	RES
4702	RES	YES	3794	22K	RES
4703	RES	YES	3795	22K	RES
3897	4K7	RES	2806	220nF	RES
3762	4K7	RES	2807	220nF	RES
3898	100R	RES			
3782	100R	RES			
7753	YES	RES			
3892	2K7	0R			
3890	2K7	0R			
3893	1K	RES			
3891	1K	RES			
3760	47K	68K			
3758	47K	68K			

MC-Service

0328	C14	3846	D11
0344	E12	3847	E10
1751	G7	3890	D12
2751	D3	3891	D12
2752	D3	3892	D12
2753	D3	3893	D12
2754	E3	4700	D13
2755	E3	4701	D13
2756	E3	4702	A12
2757	F3	4703	C12
2758	F3	4720	F11
2759	F3	4721	I12
2760	F3	5751	G2
2761	F2	5752	H2
2762	G2	5753	B7
2763	G3	6751	D2
2764	G3	6752	B8
2765	H2	6753	D8
2766	H2	6754	D8
2767	H7	6755	F8
2768	H7	6756	F8
2769	B9	6757	B7
2770	A10	7751	C3
2771	C10	7752	G10
2772	C10	7753	A11
2773	D8	7756-A	A9
2774	D9	7756-B	B9
2775	A9	7757-A	D10
2776	B10	7757-B	D12
2777	E8	7758-A	G11
2778	E8	7758-B	H11
2779	E8	7774	C8
2780	E8		
2781	E9		
2782	E9		
2783	D10		
2784	E9		
2785	E8		
2786	E8		
2790	F10		
2791	E11		
2792	D11		
2793	E10		
2797	I12		
2798	G12		
2799	I12		
2800	H12		
2801	D3		
2802	E2		
2803	E2		
2804	E2		
2805	E2		
2806	F2		
2807	F2		
2808	B7		
2809	B7		
2810	H2		
2811	H3		
2846	F8		
2847	F8		
2848	F8		
2849	G9		
2890	C8		
2891	C8		
3751	G1		
3752	G2		
3753	G1		
3754	F1		
3755	C3		
3756	C3		
3758	C10		
3760	A10		
3761	C9		
3762	A12		
3765	E10		
3766	E10		
3767	E11		
3768	E11		
3769	G9		
3770	G9		
3771	H9		
3772	I9		
3773	G11		
3776	H12		
3777	G11		
3778	I12		
3779	I11		
3780	A9		
3781	D1		
3782	A12		
3783	F11		
3784	E1		
3785	E1		
3786	E1		
3787	E2		
3788	E1		
3789	E1		
3790	F1		
3791	F2		
3792	F1		
3793	F1		
3794	F1		
3795	F2		
3796	E12		
3797	E12		
3798	C11		
3799	B11		
3830	E12		
3831	F12		
3832	B8		
3833	B8		
3839	B6		
3840	B9		
3841	B6		
3844	A9		
3845	C9		



2812 E4
2813 E2
2814 E3
2815 F3
2816 F2
2817 F3
2818 F2
2819 F1
2820 D6
2821 D7
2822 C6
2823 B7
2824 B6
2825 F3
2827 B6
2828 C7
2829 B6
2830 C7
2831 C6
2835 E4
2836 E3
2837 E2
2838 B9
2839 A9
2840 A9
2841 A8
2892 D8
3811 D7
3812 B7
3813 C7
3814 C7
3817 E3
3818 A2
3819 D6
3821 A8
3822 B9
3823 C9
3824 C9
3837 C9
3838 A2
3842 A8
3894 D8
4800 C8
5754 E2
5755 F2
5756 E2
7750 E1
7770 A2
7772-A A8
7772-B C9
7775 D9



1601 J4 3634 K2
2568 C1 3635 H2
2601 A15 3636 I2
2602 A15 3637 J2
2603 A17 3639 J11
2604 A17 3640 D4
2605 B14 3641 C4
2606 B15 3644 D4
2607 B15 3645 C3
2608 B16 3646 G14
2609 B17 3647 D1
2610 B17 3648 E1
2611 C15 3649 E1
2612 C16 3650 H2
2613 D13 3651 I2
2615 D1 3652 J2
2616 D2 3653 F1
2617 D2 3654 G1
2618 D1 3655 H1
2619 D2 3656 H2
2620 E2 3657 I1
2621 E1 3658 I2
2623 E2 3659 J1
2624 E2 3660 J2
2625 E1 4405 D1
2626 E2 4406 E1
2627 F2 4407 E1
2628 G13 4500 B2
2629 G1 4603 F4
2630 H4 4607-A C14
2631 H1 4607-B C15
2632 H3 4607-C C15
2633 H4 4607-D C15
2634 H2 4608-A C15
2635 H3 4608-B C15
2636 H3 4608-C C16
2637 I3 4608-D C16
2638 H4 4609-A C16
2639 I2 4609-B C16
2640 I3 4609-C C17
2641 I3 4609-D C17
2642 J3 4610 C17
2643 H4 4611 C4
2644 J2 4612 K3
2645 J3 4613 H3
2646 J3 4614 H1
2647 J4 4615 I1
2648 J4 4616 I1
2649 K1 4617 I1
2650 K2 4618 J1
2651 J2 4619 J1
2652 J2 4620 A9
2653 D12 4621 A9
2654 D9 4622 C9
2655 C4 4623 C9
2656 D3 4624 A11
2657 B16 4625 A11
2658 D15 4626 G2
2659 D15 4627 G2
2660 D15 4628 G14
2661 D15 4631 D11
2662 D16 4632 D11
2663 D16 4633 A14
2664 D16 4634 A14
2665 D16 4635 D14
3529-B A5 4636 D14
3529-C A5 4637 D14
3529-D A5 5601 A15
3570-A A6 5602 A17
3570-B A6 5603 B15
3570-C A6 5604 B15
3570-D B6 5605 B17
3573 B5 5606 B15
3574 A5 5608 D2
3601 B16 5609 E2
3602 I11 5610 E2
3603 C1 5611 D13
3604 D9 5613 G13
3605 C2 5615 H3
3606 D8 5616 I3
3607 C4 5617 I3
3608 D3 5618 C12
3609 D4 5619 D9
3610 D2 5620 B4
3611 D3 5621 J2
3612 E2 7601 C3
3613 E2 7602 D4
3614 F2 7603 F1
3615 F2 7604 G1
3616 G2 7605 G1
3617 G2 7606 F13
3618 H4 7607 I13
3619 G2 7608 E15
3620 H2 7609 E4
3621 H3 7610 H1
3623 I3 7611 I1
3625 J4 7612 J1
3626 J3 7613 A16
3628 K1 7614 A10
3629 K1 7615 A13
3630 K4 7616 C5
3631 K4
3632 K4
3633 K2

K6

VIDEO CONTROL & GEOMETRY

K6

TOPIC

HOP

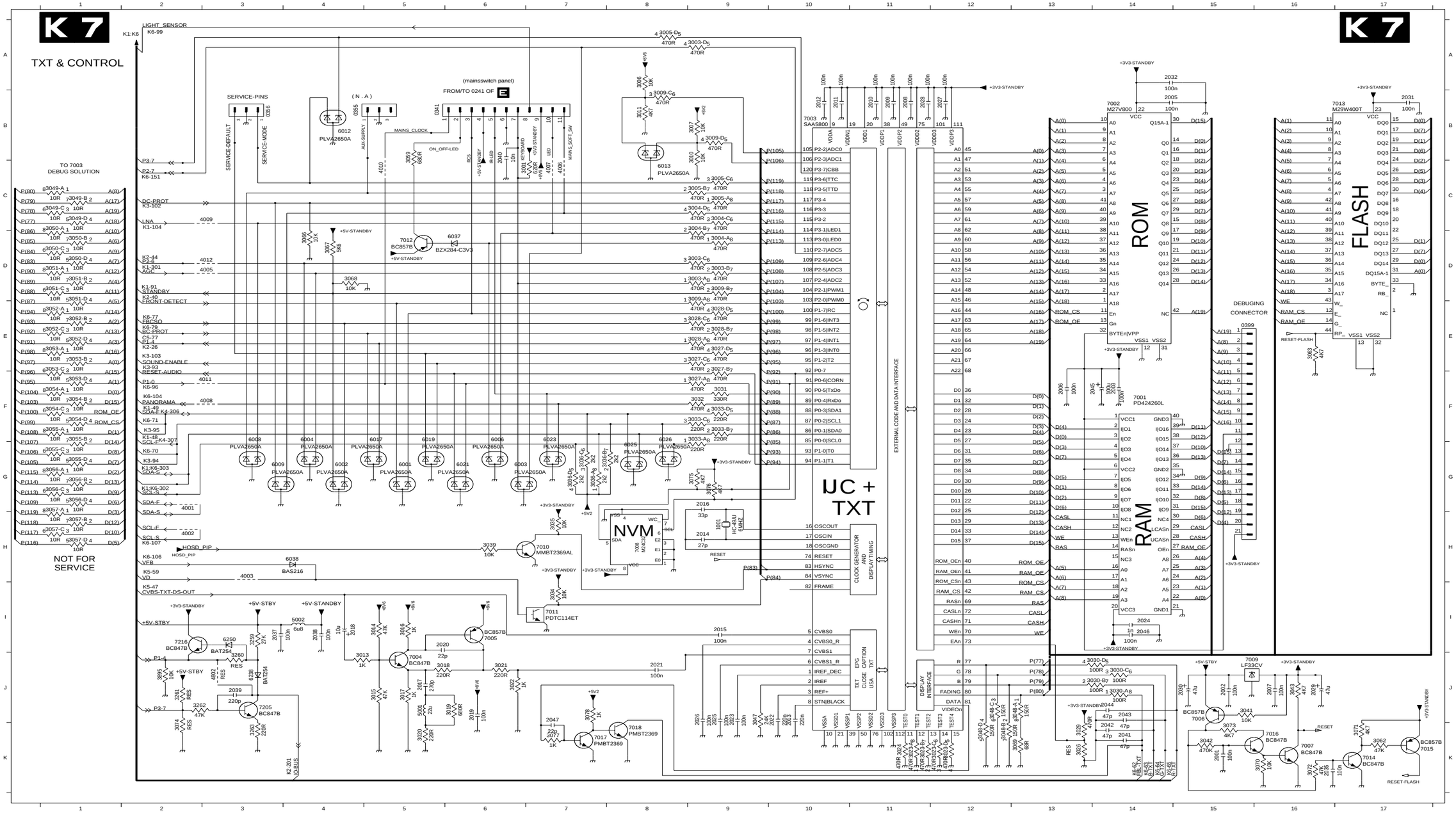
VIDEO CONTROLLER

DEFLECTION PROCESSOR

LOW			TOP	
PinName	100Hz ECO Eur	50Hz Eur	100Hz TOP/MED Eur	100Hz AP
P2-7		RESET GEMSTAR	RGB1FH/FRONT UI	H SEL

0311 G12 3342 H6
0315 D12 3343 H5
0340 C10 3344 H5
0360 H12 3345 H6
1305 H3 3350 G9
2300 E2 3351 G9
2301 F1 3352 H8
2302 F1 3353 H8
2303 F2 3369 E7
2304 F2 3370 E7
2305 I2 3400 C7
2306 I3 3401 C7
2307 G1 3402 D7
2308 G1 3404 B8
2309 E2 3405 B8
2310 E2 3406 C9
2311 E2 3407 B8
2312 H4 3408 B8
2313 H4 3409 B9
2315 H5 3412 B8
2321 G8 3413 B8
2322 G8 3414 C8
2323 G7 3420 E8
2325 G8 3422 E8
2331 F8 3423 E9
2340 H7 3424 E9
2343 H5 3425 D10
2344 H6 3426 D10
2351 G9 3427 E10
2400 C9 3428 D7
2401 C9 3429 D8
2402 B9 3430 D8
2403 C5 3431 C4
2404 C5 3432 C1
2405 C5 3433 C1
2406 C2 3434 A4
2407 C2 3435 B5
2408 D2 3436 B1
2410 D2 3437 C1
2411 D2 3438 C4
2412 D2 3439 D7
2414 B1 3440 D7
2415 B1 3441 D7
2416 B1 4311 G2
2417 C1 4408 C4
2418 B4 4410 D1
2419 B4 4420 B5
2422 E8 4425 C1
2423 E9 4426 H1
2424 D9 4427 H1
2425 C6 5300 E1
2426 D7 5301 F1
2427 B1 5302 F1
2428 D8 5305 C7
2429 C8 5306 C8
2430 C8 5307 D7
3300 E1 6300 E1
3302 F2 6310 I4
3303 E2 6311 I4
3304 E2 6334 F8
3306 H3 6340 H7
3307 F1 6341 H7
3308 F1 6344 H5
3309 H4 6350 G10
3310 G3 6354 H8
3311 H4 6420 E8
3312 H4 6422 E8
3313 G4 6424 E10
3314 H4 6429 D8
3315 H5 6430 H3
3316 G5 6431 D7
3317 F1 7300 C6
3318 G2 7341 H6
3320 E7 7351 H9
3321 F8 7402 A1
3322 F8 7403 B5
3323 F7 7418 D8
3325 G8 7419 C8
3326 G8 7420 C9
3330 F8 7424 E10
3331 E7 7438 D9
3332 F8
3334 F9
3340 H7
3341 G6

0341 B5 2005 B14 2013 J10 2021 J8 2029 J16 2040 B6 3001 C6 3004-D C9 3009-B D9 3016 I5 3023-B K11 3027-D E9 3030-C J14 3034 I7 3042 K15 3049-B C1 3051-B D1 3053-B E1 3055-B F1 3057-B H1 3068 D4 3076 G9 3895 J2 4009 C3 6002 G4 6017 F5 6238 J3 7007 K16 7015 K17
0355 B4 2006 F13 2014 H9 2022 J10 2030 J15 2041 K14 3003-A D9 3005-A C9 3009-C B8 3017 J5 3023-C K12 3028-A E9 3030-D J14 3035 H7 3043 J16 3049-C C1 3051-C D1 3053-C E1 3055-C G1 3057-C H1 3069 K13 3077 K7 4001 G2 4010 C5 6003 G6 6019 F5 6250 I3 7008 H8 7016 K16
0356 B3 2007 J16 2015 I9 2023 J9 2031 B17 2042 K14 3003-B D9 3005-B C9 3009-D B9 3018 J5 3023-D K12 3028-B E9 3031 F9 3036-A G7 3047 J9 3049-D C1 3051-D D1 3053-D F1 3055-D G1 3057-D H1 3070 K16 3078 J7 4002 H2 4011 F3 6004 F4 6021 G6 7001 F14 7009 J15 7017 K7
0399 E15 2008 B11 2016 G9 2024 I14 2032 A14 2043 J14 3003-C D9 3005-C C9 3010 B9 3019 J6 3024 K11 3028-C E9 3032 F9 3036-B G7 3048-A J13 3050-A C1 3052-A E1 3054-A F1 3056-A G1 3059 B5 3071 K17 3259 I3 4003 H3 4012 D3 6006 F6 6023 F7 7002 B14 7010 H7 7018 K8
1001 H9 2009 B11 2017 J5 2025 J9 2033 K16 2044 J14 3003-D A9 3005-D A8 3011 B8 3020 K5 3026 K13 3028-D E9 3033-A F9 3036-C G7 3048-B K12 3050-B D1 3052-B E1 3054-B F1 3056-B G1 3062 K17 3072 K16 3260 J3 4005 D3 4802 J3 6008 F3 6025 G8 7003 B10 7011 I7 7205 J3
2001 K15 2010 B11 2018 I4 2026 J9 2037 I3 2045 F14 3004-A D9 3006 A8 3013 J4 3021 J6 3027-A F9 3029 K13 3033-B F9 3036-D G7 3048-C J12 3050-C D1 3052-C E1 3054-C F1 3056-C G1 3063 E16 3073 K15 3261 J2 4006 C7 5001 J5 6009 G3 6026 F8 7004 J5 7012 D5 7216 I2
2002 J15 2011 B10 2019 J6 2027 B12 2038 I4 2046 I14 3004-B C9 3007 B9 3014 I5 3022 J6 3027-B E9 3030-A J14 3033-C F9 3039 H6 3048-D K12 3050-D D1 3052-D E1 3054-D F1 3056-D G1 3066 D4 3074 K2 3262 J2 4007 C7 5002 I4 6012 B4 6037 D6 7005 I6 7013 B16
2003 F14 2012 B10 2020 I5 2028 B11 2039 J3 2047 J7 3004-C C9 3009-A D9 3015 J5 3023-A K11 3027-C E9 3030-B J14 3033-D F9 3041 J15 3049-A C1 3051-A D1 3053-A E1 3055-A F1 3057-A G1 3067 D4 3075 G9 3263 K3 4008 F3 6001 G5 6013 C8 6038 H4 7006 J15 7014 K17



	LOW			TOP	
PinName	100Hz ECO Eur	50Hz Eur	1FH AP/US	100Hz TOP/MED Eur	100Hz AP
P1-0			MAINS CLOCK	STATUS4	MAINS CLOCK
P1-4	I/O_CNTRL_BUS IN	I/O_CNTRL_BUS IN	16:9 ARFRONT	I/O_CNTRL_BUS IN	16:9 ARFRONT
P2-6		STATUS3	Ext2 FRONT	STATUS3	
P2-7			RESET GEMSTAR	RGB1FH/FRONT UI	H SEL
P3-7	I/O_CNTRL_BUS OUT	I/O_CNTRL_BUS OUT	REMOTE LOCATOR	I/O_CNTRL_BUS OUT	

MC-Service

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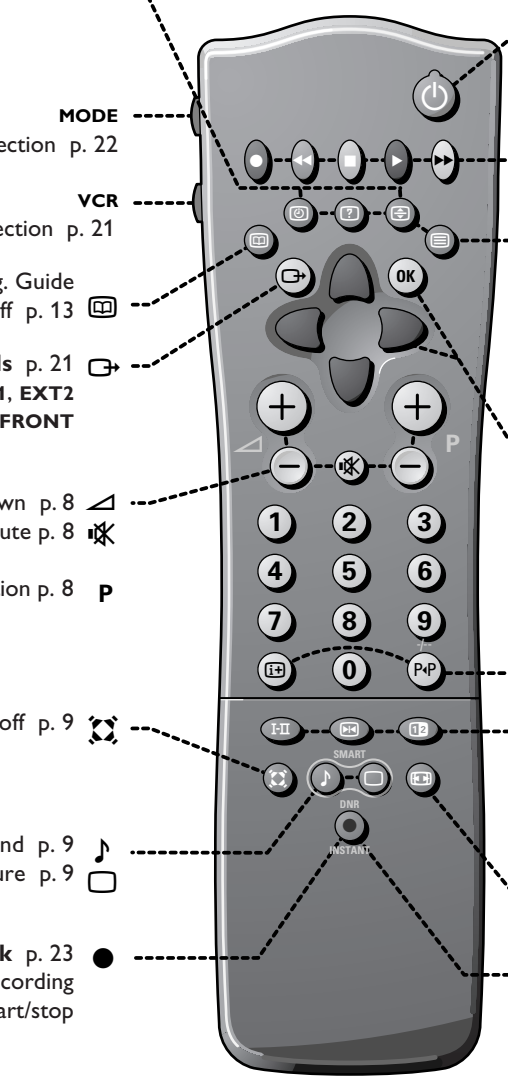
easy LINK

EasyLink features are based on the "one touch operation" approach. This means that a sequence of actions are executed at the same time in both the television and the video cassette recorder, provided both are fitted with the EasyLink function and connected with the eurocable supplied.

Your remote control



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- play
- wind

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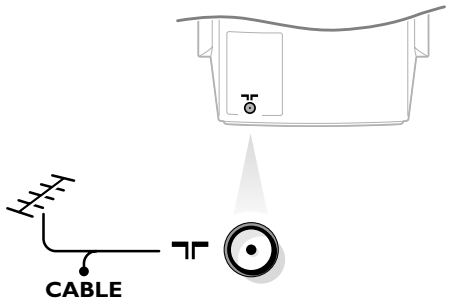
Preparation

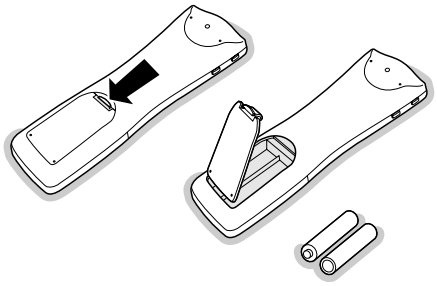
❶ **Place the TV on a solid surface**.
For ventilation, leave at least 5 cm free all around the TV.
To prevent any unsafe situations, do not place any objects on top of the TV.

❷ **Insert the aerial plug** tightly into the aerial socket ⊓ at the back of the TV.



❸ Insert the mains plug in the wall socket with a mains voltage of 220V-240V.

❹ Remote control: Remove the cover of the battery compartment.
Insert the 2 batteries supplied (Type R06-1,5V).

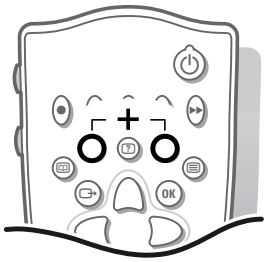

R06 / AA

The batteries supplied do not contain the heavy metals mercury and cadmium. Nevertheless in many countries exhausted batteries may not be disposed of with your household waste. Please ensure you dispose of exhausted batteries according to local regulations.

Note: this remote control functions with TVs which use the RC6 signalling standard.

❺ **Switch TV on**: Press the power switch ⏻ on the front of your TV.
A green indicator and the screen light up.
If the indicator is red, press the **- P +** key on the remote control.

The green lamp blinks every time you press a key on the remote control.
*When you switch on your set **for the first time**, the menu **LANGUAGE** automatically appears on the screen. Alternatively the explanation appears in the different languages. Choose your own language and press the **OK** key on the remote control.*
Go on to page 4.

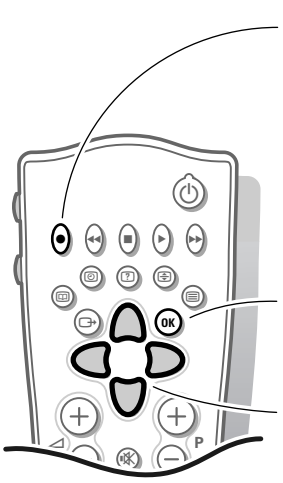


Installation

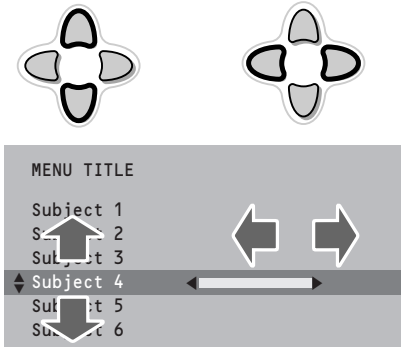
Select the INSTALLATION MENU :

- Press ⏻ and ⇕ at the same time.

To use the menus



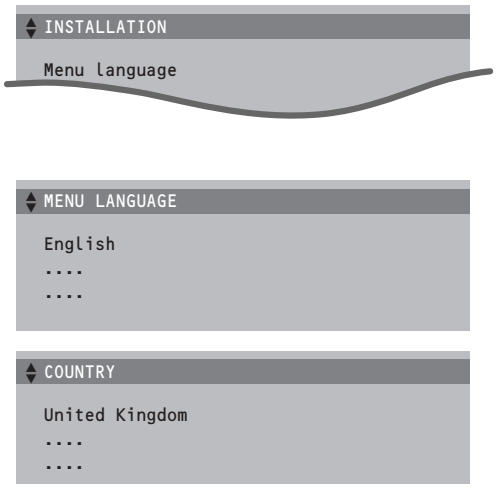
1. Use the cursor in the up/down, left/right direction to select a menu item.
2. Press the **OK** key to activate.
3. Use the red ● key to return or to switch menu off.



Store TV channels

If the TV is connected to a video recorder with the EasyLink function, the TV automatically transfers the language and country selections to the video recorder. After the new or extra TV channel(s) ha(ve)s been stored, the TV automatically transfers that (those) TV channel(s) to the video recorder.
*The message **EasyLink : Downloading .....** appears on the screen.*
The programme list of the video recorder is now equal to the one of the TV.

Select the menu language and country



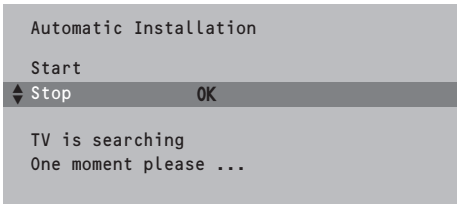
First, you have to select your language and your country.

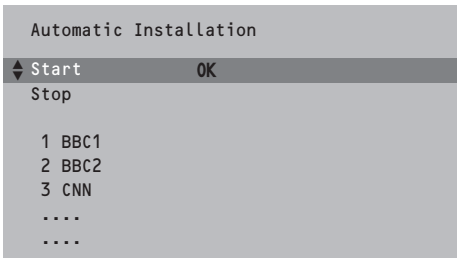
1. Select the menu **Language** and press the **OK** key.
2. Select your language and press the **OK** key.
3. Select **Country** and press the **OK** key.
4. Select the country where you are now located and press the **OK** key. Select **Other** when none of the countries applies.

You can now search for and store the TV channels in two different ways: using **automatic installation** or **manual installation** (tuning-in channel by channel).

- Select your choice and press the **OK** key.

Automatic installation





In the Automatic Installation menu select **Start** and press the **OK** key to activate the searching. All TV channels are searched for and stored automatically.

If a cable system which broadcasts ACI (Automatic Channel Installation) or a TV channel transmitting a teletext page with the frequencies and programme names of all the TV channels which can be received, is detected, the search is stopped and a programme list appears.
The programme list is automatically filled with all the programme numbers and names of the TV channels transmitted.

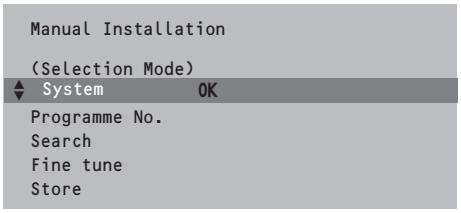
It is possible that the cable company or the TV channel displays a broadcast selection menu. Layout and items are defined by the cable company or the TV channel. Make your choice with the cursor and press the ***OK*** *key.*

To exit from the menu

- Press the red ● key on the remote control.

Go on to page 6

Manual installation



Searching for and storing TV channels is done channel by channel.
You must go through every step of the Manual Installation menu.

Selection Mode is only present and lights up if the country you selected also offers the channel option (C-channels for aerial channels, S-channels for cable channels).
You can choose either channel or frequency mode.

❶ Select the TV system

- Select the country or part of the world from where you want to receive the TV channel.
  If you are connected to a cable system, select your country.

❷ Enter the programme number with the digit keys.

❸ Search for a TV channel

- Press the cursor left/right. The frequency or the channel number increases until a TV channel is found.

Direct selection of a TV channel

If you know the frequency, or the C- or S-channel number, enter it directly with the digit keys 0 to 9.
Ask for a list from your cable company or dealer, alternatively consult the Table of frequencies on the inside backcover of this handbook.

❹ Fine tune
In case of poor reception, you can improve the reception by adjusting the frequency with the cursor left/right.

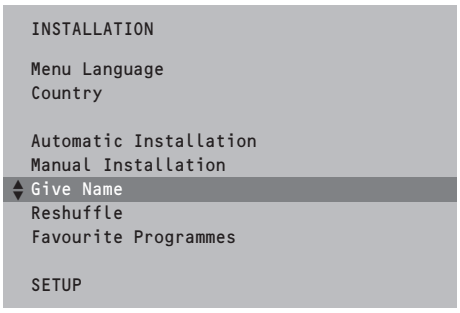
❺ Store steps ❶ till ❹

- Select **Store** and press the **OK** key.

Repeat every step to store another TV channel.

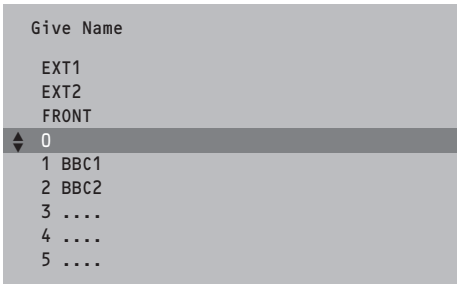
To exit from the menu :

- Press the red ● key on the remote control.



Give name

It is possible to change the name stored in the memory or to assign a name to a TV channel which has not yet been entered. A name with up to 5 letters or numbers can be given to the programme numbers 0 to 99. For example SUPER, BBC1,... Between 99 and 0 you can also name any peripherals that are connected.

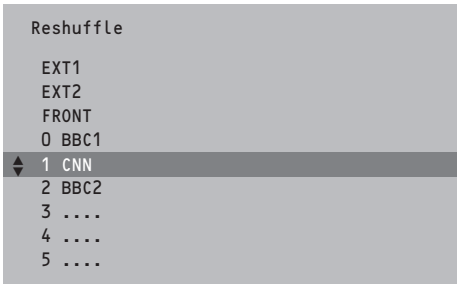


1. Select **Give Name** in the **INSTALLATION** menu and press the **OK** key.
2. Select the programme number.
3. Press the **OK** key.
4. Select the character with the cursor up/down.
5. Select the following position with the cursor left/right.
6. Select the following character.
7. Press the **OK** key when finished.
8. Press the red ● key to return to the **INSTALLATION** menu.

A space, numbers or other special characters are located between Z and A.

Reshuffle the programme list

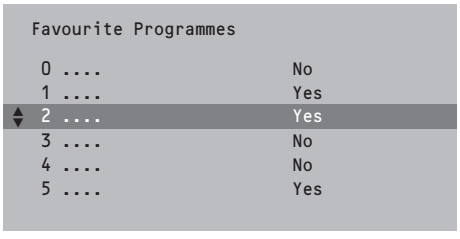
According to your preference you **can** change the order of the stored TV channels.



1. Select **Reshuffle** in the **INSTALLATION** menu and press the **OK** key.
2. Select the programme number you want to change.
3. Press the **OK** key.
4. Select the new number.
5. Press the **OK** key.
   Repeat the operation until all TV channels are allocated as you like.
6. Press the red ● key to return to the **INSTALLATION** menu.

Select Favourite TV channels

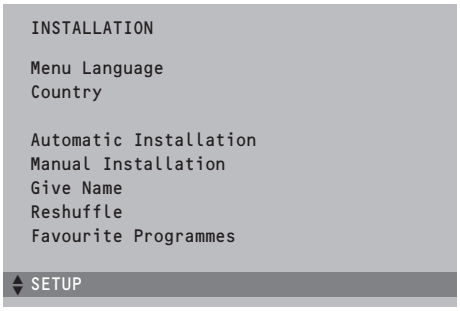
After leaving the installation you can browse through the TV channels by pressing the **- P +** key. Only those TV channels which are in the favourite list will be displayed. The non-favourite TV channels can still be selected with the digit keys.

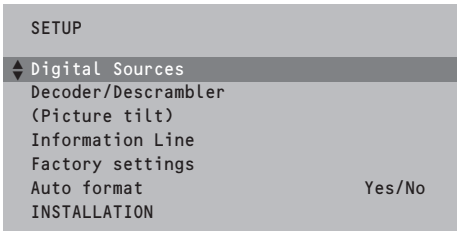


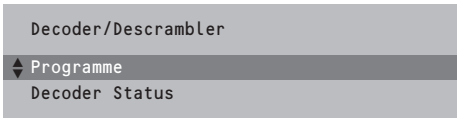
1. Select **Favourite programmes** in the **INSTALLATION** menu and press the **OK** key.
2. Select your favourite programme number.
3. Select **Yes** or **No**.
4. Repeat for every TV channel you want to change into a favourite or a non-favourite TV channel.
5. Press the red ● key to return to the **INSTALLATION** menu.

*If the TV is connected to a video recorder with the EasyLink function, the TV automatically transfers the reshuffled or modified TV channels to the video recorder. The message **EasyLink : Downloading Presets ...** appears on the screen. The programme list of the video recorder is equal again to the one of the TV.*

easy LINK







easy LINK

Install TV Setup

1. Use the cursor in the up/down, left/right direction to select the menu item.
2. Use the **OK** key to activate.
3. Use the red ● key to return or switch menu off.

Digital sources

See Connect Peripheral Equipment, p. 20 to connect your digital equipment, like a DVD, satellite tuner or a similar digital device.

Define Decoder/Descrambler programme numbers

If you have connected a decoder or a descrambler, see p. 19, you can define one or more programme numbers as decoder programme numbers.

- Press the cursor left/right to select **Off**, **EXT1** or **EXT2**, the euroconnector where you connected your decoder.
- Select **Off** if you do not want the selected programme number being activated as a decoder programme number.

Select **EXT2** *when the decoder is connected to your EasyLink video recorder. When selecting the decoder, the message* ***EasyLink: Downloading Presets....*** *appears on the screen.*

Picture Tilt *(only for 32" or 82 cm sets)*

- Select **Picture Tilt** with the cursor up/down.
- Keep the cursor left/right pressed to adjust the rotation of the picture.

Information Line

After the selection of a TV programme or after pressing the i+ key on the remote control, a TV channel which broadcasts teletext may transmit the name of the TV channel or the programme name or another message which appears briefly in the information line on the screen.
When selected **Off**, the information line will only appear after pressing the i+ key, and not after the selection of a TV channel.

Factory settings

Select **Factory settings** and press the **OK** key to restore picture and sound settings, predefined in the factory.

Auto format

Selecting **Auto format Yes**, the screen will automatically be filled as much as possible with the picture when TV programmes are not carrying special signals detecting the correct screen format. With the ⊡ key on the remote control you can still select other picture formats (see p. 9).

Installation

Select **Installation** and press the **OK** key to return immediately to the **INSTALLATION** menu.

To exit from the menu

4. Press the red ● key on the remote control.

Use of the remote control

● **PICTURE** menu

◀◀ **SOUND** menu

■ **FEATURES** menu

▶ **Programmes**

Select the desired TV channel and press the **OK** key.

NEXTVIEW/TXT Prog. guide on/off
see p. 13

Select peripherals

Press this key repeatedly to select **EXT1**, **EXT2** or **FRONT**, according to where you connected your peripherals (see p. 21).

Volume

Press + or - to adjust the volume.

Mute key

Temporarily interrupt the sound or restore it.

P Programme selection

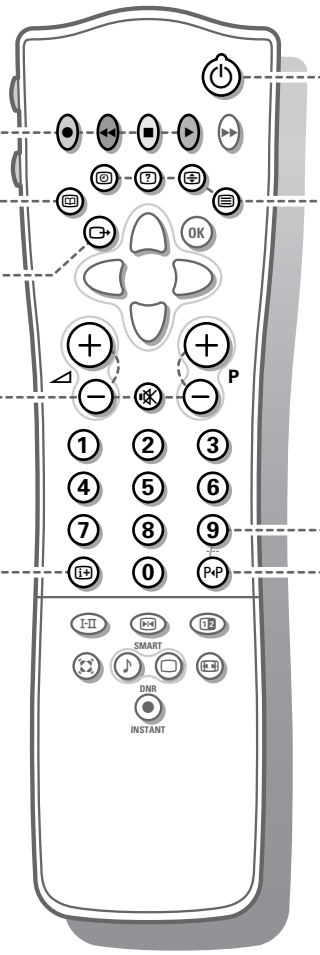
To browse through the TV channels activated in the Favourite Programme menu. See p. 6.

Screen information

Press for 5 seconds to activate/de-activate the extended or reduced display of TV channel and programme information on the screen.

This function is not available when continuous subtitles have been switched on.

Press briefly to display information about the selected TV channel and programme, the sound reception, the selected DNR setting and the remaining time set with the sleeptimer.



Standby

The set is switched off and the red indicator (orange in the case of NEXTVIEW info acquisition) lights up.

To switch the TV on again, press **- P +** or the digit keys.

If your EasyLink video recorder has the system standby function and you press the standby key for 3 seconds, both the TV and video recorder are switched to standby.

Your TV consumes energy in the standby mode. Energy consumption contributes to air and water pollution. We advise to switch off your TV overnight instead of leaving it on standby. You save energy.

Teletext on/off see p. 16.

Time display

The time, downloaded from the TV channel (with teletext) stored on programme number 1 or under the lowest favourite programme number, is displayed on the screen.

This function is not available when continuous subtitles have been switched on.

Reveal (in teletext mode)

Press to reveal/conceal the hidden information, such as solutions to riddles and puzzles.

Enlarge (in teletext mode)

Press repeatedly to display the upper part, the lower part and then to return to the normal page size.

0/9 Digit keys

To select a TV channel.

For a two digit programme number, enter the second digit within 2 seconds.

Previous programme

The previously selected TV channel is displayed. The -/-- indication has a video recorder/DVD function.

Video recorder, DVD or Satellite operation

Press one of this keys to use the remote control directly in the video recorder, DVD or satellite mode. See p. 21 and 22.

Incredible Surround

In **MONO** sound mode, this feature, when switched on, enables you to hear a spatial effect of sound.
In **STEREO** sound mode, when **Incredible Surround On** is selected, it seems as though the loudspeakers are spread further apart from one another

Smart Keys

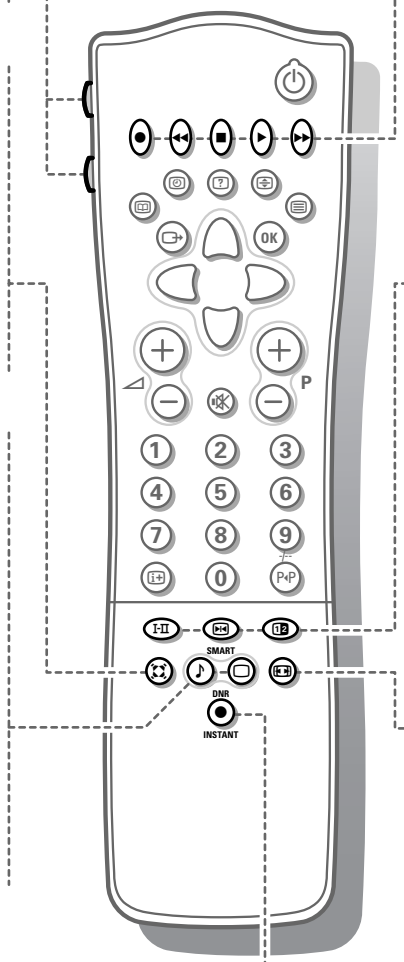
To select predefined picture and sound settings.

Smart Sound

Each time it is pressed, a different sound setting is selected, corresponding with a specific factory setting of Treble or Bass.
Personal refers to the personal preference setting of picture and sound.

Smart Picture

Each time it is pressed, a different picture setting is selected, corresponding with a specific factory setting of Contrast, Colour, Sharpness and Dyn. Contrast.



DNR Dyn. Noise Reduction

To reduce the image noise and improve picture quality when receiving weak signals.
Press this key to select **Off** or **Automatic.**
When **Automatic** is selected, the image noise reduction is set automatically.

Instant record/stop

If your video recorder has the EasyLink function the **INSTANT** ● key for record can be operated in the TV mode.
Press again to stop.

● ◀◀ ■ ▶ ▶▶ Video recorder see p. 21.

I-II Bilingual choice and sound mode selection

Press this key
- to switch from **Stereo** to **Mono** sound, in case of stereo transmission, or from **Digital Sound** to **Digital Sound available**, in case of digital transmission;
- to choose between language I (Dual I)or language II (Dual II), in case of bilingual transmission. The setting is stored for each TV channel separately.

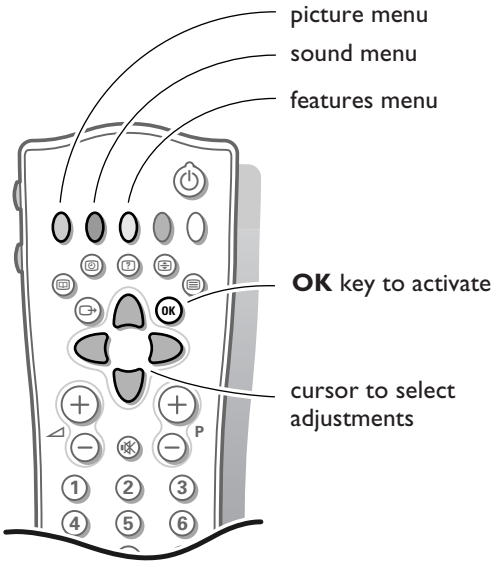
Freeze

To activate/de-activate the frozen picture.

Dual Screen see p. 12

Picture format

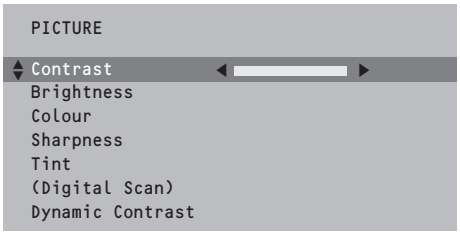
Press this key repeatedly to select another picture format: 4:3, Movie Expand 14:9, Movie Expand 16:9 with or without subtitling, Wide Screen, Automatic (in case Auto format Yes has been selected in the **SETUP** menu) or Super Zoom.
When in Movie Expand 14:9 or 16:9 or Super Zoom picture format you can make subtitles visible with the cursor up/down.
Sometimes video recorders or TV programmes carry special signals which will automatically switch the TV to the correct screen format.
Selecting Auto format, the screen will be filled as much as possible with the picture when TV programmes are not carrying special signals detecting the correct screen format.
Auto format is disabled when in Dual Screen.



Use of the menus

1. Press the red, green or yellow colour key to display/cancel the **PICTURE**, **SOUND** or **FEATURES** menu.
2. Use the cursor in the up/down, left/right direction to select the menu item.
3. Use the **OK** key to activate.
4. Press the same colour key again to return or to switch menu off.

Picture menu



If a NTSC peripheral is connected to **EXTERNAL 2**, *the option Hue also appears.*

Sharpness

You can adjust the Sharpness for each TV channel separately.

Tint

- Select the colour temperature: **Normal**, **Warm** or **Cool**.

Digital Scan (Line Flicker Reduction) (if provided)

In Movie Expand picture format, digital scan is always active.
The menu item is not available.
In certain circumstances while watching TV programmes it may be preferred to switch off the digital scan line flicker reduction.

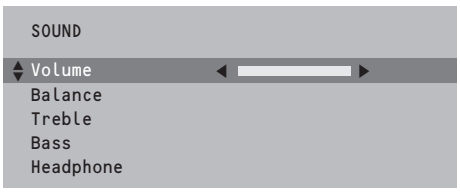
- Press the cursor left/right to select **On** of **Off**.

Dynamic Contrast

To make the contrast between darker and brighter picture parts more noticeable, select the **Med** setting.
In certain circumstances it may be preferred to select **Min** or **Off**.

- The modified adjustments for Contrast, Brightness, Colour, Tint, Digital Scan (if provided) and Dynamic Contrast are automatically stored for all TV channels.
Select **Factory settings** in the Setup menu to restore the predefined factory settings, see p. 7.

Sound menu



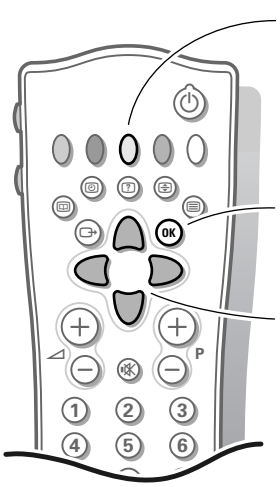
Headphone

See Connect Peripheral Equipment, p. 20 for the connection of the headphone.
Select **Dual** to choose between the dubbed or original language when the TV channel broadcasts in two languages.

The modified adjustments for Volume, Balance, Treble and Bass are automatically stored for all TV channels.
Select **Factory settings** in the Setup menu to restore the predefined factory settings, see p. 7.

To exit from the menus

- Press the corresponding red, green or yellow colour key.



Features menu

1. Press the yellow colour key to display/cancel the **FEATURES** menu.
2. Use the cursor in the up/down, left/right direction to select the menu item.
3. Use the **OK** key to activate.

Sleeptimer

With the sleeptimer you can set a time period after which the TV should switch itself off to standby.
The counter runs from **Off** up to **180 min.** or from **180 min**. down to **Off**.
One minute before the TV is set to go to standby, the remaining seconds appear on screen. You can always switch off your set earlier or change the set time.

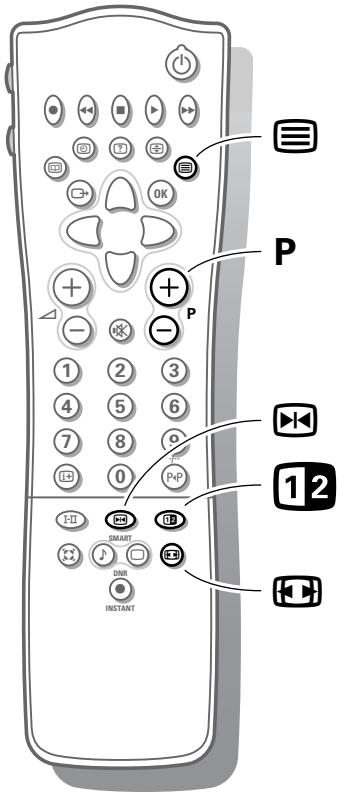
Child Lock

If the child lock is on, the TV can only be switched on with the remote control. The P - and + keys on top of the TV cannot be used to select a TV channel. In this way you can prevent unauthorised use of your TV.
If the message **Child Lock On** appears, the child lock must be switched off before you can use the P - and + keys on top of the TV to select a TV channel.

Subtitle

TV channels with teletext often transmit certain programmes with subtitling. See Teletext, Continuous Subtitles, p. 18 how to select the proper subtitle page from the teletext index.
Select **Subtitle On** or **Off**.
The subtitle symbol appears when subtitles are stored for the selected TV channel.
The subtitle symbol does NOT appear as long as the subtitles for the selected TV channel are not stored.

Note: subtitling is not available when in Dual Screen mode with teletext.



Dual Screen

1. Press the 1 2 key to switch on Dual Screen.
   The TV screen is divided into 2 parts:
   - the left side for the normal main picture,
   - the right side for teletext broadcast by the selected TV channel.

   To operate teletext, see p. 16.

   If Dual Screen is **Off**, the picture or teletext is displayed full screen.

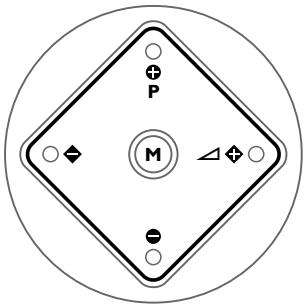
2. Press the key to select a vertical squeezed or a non vertical squeezed picture size.

3. Press **+ P -** to run through the teletext pages.

4. Press the key to return to a full picture screen and to select another TV channel with the + P - or with the digit keys.

Select still picture

- Press the key to freeze the pictures.
  The information in the teletext page is not being updated by the teletext broadcaster.



The keys on top of the TV

Should your remote control be lost or broken you can still change some of the basic picture and sound settings with the keys on top of the TV.

- Press the **M** key repeatedly to select **Volume**, **Brightness**, **Colour**, **Contrast**, **Treble** or **Bass**.
- Press the **P** - or + key to regulate the selected adjustment.
  When the menu adjustment is not displayed, the **P-** or **+** keys enable you to select the TV channels, the ◿ - or + keys to adjust the volume.

The selected adjustment automatically switches off when after 10 sec. no action has been executed.

NEXTVIEW / Teletext Programme Guide

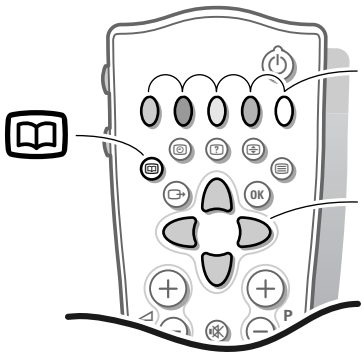
Today, most broadcasters in Europe, are offering teletext pages containing their programme schedule of today. These pages can be requested by switching the TV to **Teletext Programme Guide**.

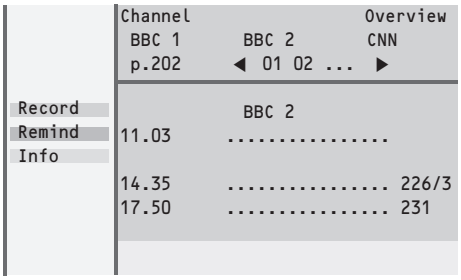
An increasing number of broadcasters are offering an extended programme guide service called **NEXTVIEW.** NEXTVIEW is a new way of presenting programme schedules and offers more features than common teletext. With NEXTVIEW it is possible to show for instance all the movies coming tonight.

Both facilities are integrated in this TV: NEXTVIEW and Teletext Programme Guide. If a TV channel supports NEXTVIEW then the TV will automatically present the NEXTVIEW programme schedule. If the TV channel supports just teletext, then the TV will switch automatically to Teletext Programme Guide. Both facilities are offering the same functions: record, remind and info. However in case of Teletext Programme Guide the broadcaster is responsible if these functions are possible.

You can search for the programmes you want to watch 24 hours per day. It is also possible to search for a programme by theme, e.g. sport, movie, etc. Once a programme has been selected it can be tagged, to remind you, or to record on the video recorder automatically (provided the video recorder is equipped with NEXTVIEWLink), once, daily, weekly or series.
Teletext Programme Guide / NEXTVIEW also allows direct access to detailed information about programmes if provided by the broadcaster.

The broadcaster is responsible for the contents of the information.
The TV is responsible for the capture of that information and for the presentation to the user.





Teletext channel guide

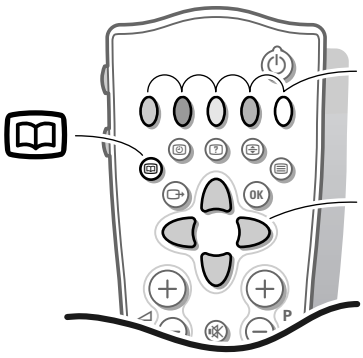
TV channels which broadcast teletext also transmit a page with the programme guide of the day. For each selected TV channel the programme guide page can be selected with the 📖 key:
- automatically if the selected TV channel supports services like PDC (Programme Delivery Control) or MIP (Magazine Inventory Page).
- if automatic preselection is not possible then the index page is displayed and the proper programme guide pagenumber of the selected TV channel has to be entered with the digit keys.

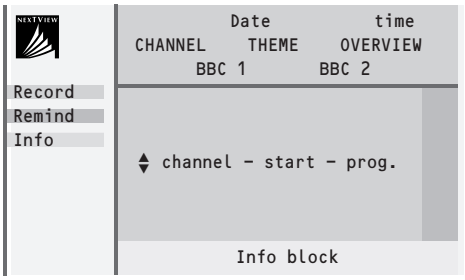
The programme guide page will be stored automatically.

Every time you press the 📖 key, the programme guide page of the selected TV channel will be available if the TV channel does not support NEXTVIEW.
Press the cursor down to select the displayed main index programme guide pagenumber.
Press the cursor left/right to run through the subpages.

The function items record, remind or info, corresponding with the coloured keys, become highlighted if the displayed programme page satisfies the Video Programming via Teletext (VPT) requirements. Select a programme item and press one of the function keys, e.g. Record or Remind. See Basic functions further on.
The Info item is enabled if the selected programme contains a page number with an optional subcode referring to a page with more info about the programme.

Use of the Teletext Programme Guide / NEXTVIEW menus





1. Press the 📖 key on the remote control to display/cancel the Teletext Programme Guide / NEXTVIEW menu.
2. Use the cursor in the up/down, left/right direction to select the date, **CHANNEL** for the channel guide, **THEME** for the theme guide, **OVERVIEW** for an overview of all the programmes which are marked as reminders or for recording, the programme guide page number or to enter the programme list.
3. Enter the proper programme guide pagenumber with the digit keys or with the - P + key.
4. Press the cursor left/right to run through the subpages.
5. Press one of the colour keys to select one of the basic functions, record, remind, info. See Basic functions further on.
6. Press the **OK** key to return to the header area again.

The NEXTVIEW offers 3 modes to sort and represent information

Channel

The channel guide provides an overview of all programmes that are broadcasted by a single channel during one day.
Already passed programmes can be made visible via cursor up.
With cursor left/right another favourite channel can be selected, also if the cursor selection is located in the programme list area.

In case of Teletext Programme Guide, then the first time after installation that a channel is selected, you are requested to enter the page number of the programme guide page.

Theme

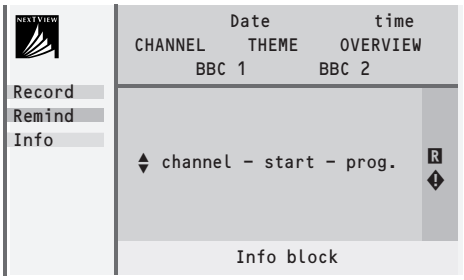
The theme guide displays a list of all programmes at the selected date, that matches with the selected category (news, sport, culture, movies, ...).
The default starting item will be the current or next programme on the current TV channel.
When another date is selected the list of programmes displayed will start with the earliest programme.
The **THEME** selection possibility is only present if programmes in the TV guide, have defined themes.

Overview

The Overview list provides a list of all reminders and recordings of the selected day.
When more than one of the same items start at the same time or have an overlap in time, these will be marked by a red colour and a message.

After the programme has been broadcast, all items set for once will be deleted from the list.
This menu can be used to change a reminder or recorder.

Note: short info is not possible when the overview list is displayed.



Basic functions

The functions can be activated with the corresponding colour keys.
If the function is not available, then the text is downlighted.

When **Record** R or **Remind** ◆! are activated a small menu pops up in which you can choose the interval: once or daily. The default interval is set to Once.
The colour of the tag refers to the interval.
Programming of a record or a remind is closed by pressing any key except cursor left/right. Storing appears to indicate the tuner of the video recorder is programmed.
When watching, a message will appear on the screen the moment the tagged programme with ◆! starts.
When the TV is in standby, the TV switches on the moment the tagged programme with ◆! starts.

If a programme is an episode of a series, the options **daily** and **weekly** are replaced by the option **series**. In this case the system identifies when the next episode of the series will be broadcast.

Note:
- Recording via NEXTVIEW is possible with any video recorder with the NEXTVIEWLink function and connected to EXT2.
*Only if both conditions are satisfied **RECORD** is highlighted and enabled.*

When **Info** is activated, information relating to the selected programme or advertisements are displayed.
In some cases the complete information does not fit on the screen.
Use the cursor up/down to browse through the complete info.

Acquisition of NEXTVIEW information

Acquisition takes place if the TV is switched on, and in standby if reminders are active.

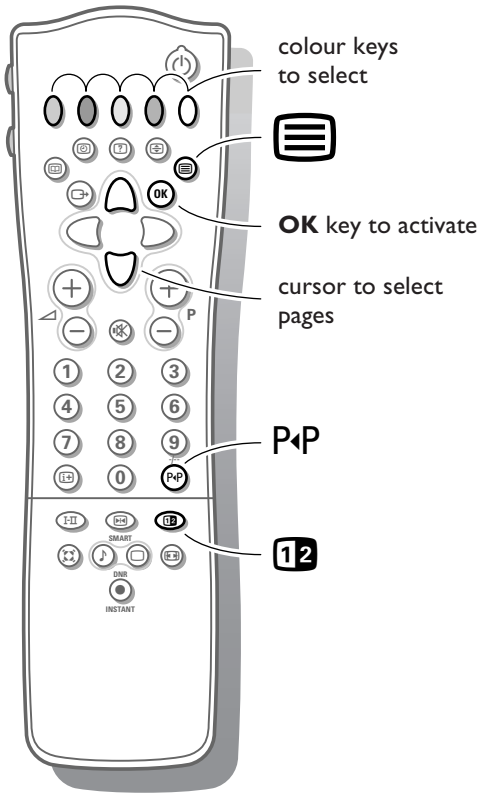
If the TV has just been switched to the current TV channel, it will take up to 10 seconds before the first 5 programmes will be shown. It may take 35 seconds before the complete list of programmes for today and tomorrow for the selected TV channel is filled.
As long as the list is not completely filled, the message **Please, wait** appears at the bottom of the screen.
If the channel switching has been occurred more than 40 seconds ago, then the programme list has been already stored. In that case the list will be instantly displayed.

Video recorder restrictions with NEXTVIEW

The daily, weekly or series options, the number of recordings set and the way overlapping recordings are managed, depend on the type of video recorder type you have. The moment all video recorder timers are used, the item **Record** in the menu will be removed.

Upload video recorder overview.
When the TV is switched on, the programmed record blocks are uploaded to the TV to check whether any manual addition or deletions have been done. This is shown in the overview.
The video recorder manages and removes timer recordings when performed.

Some NEXTVIEWLink video recorders do not allow a daily programming of recording to start on a Saturday or Sunday. In this case the item **daily** will be removed from the menu on those days.



Teletext

Most TV channels broadcast information via teletext. Each channel which broadcasts teletext transmits a page with information on how to use its teletext system. Look for the teletext page with the main index (usually p. 100).

Depending on the TV channel, teletext is transmitted in different systems. The colours used in the options line correspond with the colour keys of your remote control.

About the Easy Text system

The Easy Text system considerably reduces the waiting time (on condition the teletext broadcast of the particular TV channel is switched on for at least half a minute) by :

- a **direct selection** of previous and following pages which are in transmission and of the pages referred to in the options line
- a **habit watcher list**: frequently used pages are put in a list of preferred pages, so that they are immediately available afterwards
- the **precapturing of the page numbers** referred to in the displayed page
- the **precapturing of all the subpages**.

Switch Teletext on and off

- Press ☰ to switch on or off the teletext.
  The main index page appears on the screen together with two information lines at the top and one option line at the bottom of the screen.

Select a Teletext page

With the digit keys

- Enter the desired page number with the digit keys.
  The page counter seeks the page or the page appears immediately when the page number has been stored in the memory.
  A message appears when you have entered a non existent or an incorrect page number. Page numbers beginning with 0 or 9 do not exist. Choose another number.

With the option line

- Select with the colour keys, corresponding to the coloured options at the bottom of the screen, the desired subject.

Select Picture/Teletext

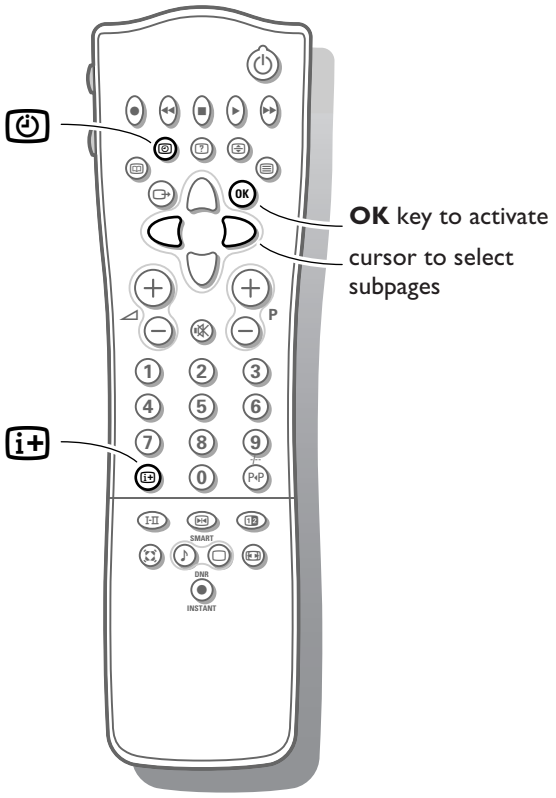
- Select a TV channel which broadcasts teletext.
- Press the 1 2 key.
  The screen is divided into two parts: the left side for the normal main picture, the right side for teletext broadcast by the selected TV channel.
- Press the ☰ key to return to a full screen picture.

Quickly run through the teletext pages

- Press the cursor up/down or the - P + key to run through the previous or the following pages.

Select the previously selected txt page

- Press the P↤P key.



OK key to activate

cursor to select subpages

Select the index teletext page

- Press the white colour key to display the main index (usually p.100).

Only for T.O.P. teletext broadcasts :

T.O.P. orders the pages in categories and adds other possibilities of enhancing ease of use.

- Press i+. A T.O.P. overview of the teletext subjects available appears. Not all TV channels broadcast T.O.P. teletext. When the teletext system is not T.O.P. teletext, a message appears at the top of the screen. A T.O.P. overview is not available when in Dual Screen mode.

- Select with the cursor up/down, left/right the desired subject and press the **OK** key.

Select subpages

When a selected teletext page consists of different subpages, one of the subpages appears on the screen.
The coloured number in the first information line refers to the displayed subpage.
The other subpages can be selected in 2 ways :

1. With the cursor left/right.

The other subpage numbers appear in white as soon as the transmission has found them. They are stored in the memory so that they are available while the teletext page is on screen.

- Select with the cursor left/right the previous or the following subpage.

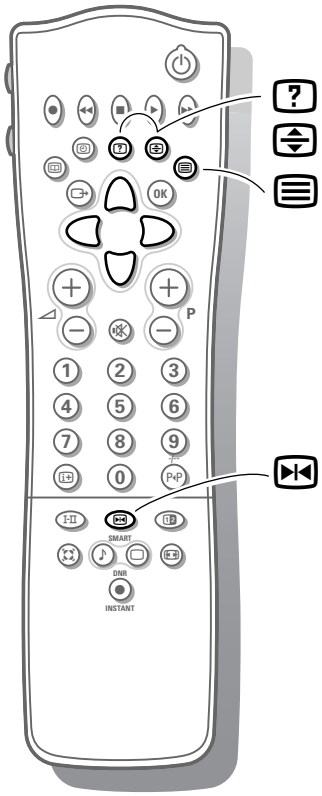
2. With the ⏲ key.

- Enter the subpage number yourself.
Press ⏲. Enter the desired subpage with the digit keys : e.g. 3 for the third page of seven subpages.
The TV searches for the selected subpage.

Automatically rotating subpages:

- Press ⏲ again to cancel the entered digit key for the subpage.
Now the subpages rotate automatically.

- Press ⏲ again to select the subpages with the cursor left/right again.



Special teletext functions

Hold

- Press ⏭ to stop the page counter from seeking when you have entered a wrong page number or when the page is not available.
- Enter another page number.
  Not possible when in dual screen teletext mode.

Enlarge

- Press ⇕ repeatedly to display the upper part, the lower part and then to return to the normal page size. When enlarge is activated, you can scroll the text line per line by using the cursor up/down.

Reveal

- Press ? to reveal/conceal the hidden informations, such as solutions to riddles and puzzles.

Select Continuous Subtitles

TV channels with teletext often transmit certain programmes with subtitling. For each TV channel you can store a subtitle page which will be displayed continuously if the programme being broadcast is transmitted with subtitles.

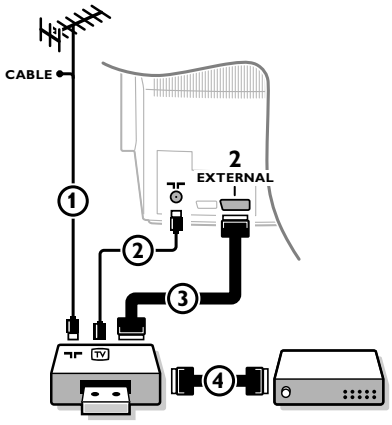
- Switch on teletext and select the proper subtitle page from the index.
- Switch off teletext.
  The message Subtitle stored appears.
  Every time a programme of the selected TV channel is subtitled, the subtitling will be available for that TV channel.
- Select Subtitle On or Off in the Features menu, see p. 11.
  The subtitle symbol ▭ appears when subtitles are stored for the selected TV channel.
  The subtitle symbol ▭ does NOT appear as long as the subtitles for the selected TV channel are not stored.

Note: subtitling is not available when in Dual Screen mode with teletext.

Connect Peripheral Equipment

There is a wide range of audio and video equipment that can be connected to your TV. The following connection diagrams show you how to connect it.

Video recorder



- Connect the aerial cables ①, ② and, to obtain a better picture quality, eurocable ③ as shown opposite.

If your video recorder is provided with the EasyLink function, the eurocable supplied with it, should be connected to ***EXTERNAL 2*** *to benefit from the EasyLink functionality.*

You have to do the following if you do not connect the eurocable ③,

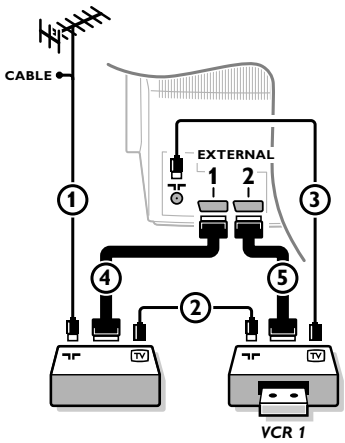
Search for and store the test signal of the video recorder

- Unplug the aerial cable ① from the aerial socket ⊓ of your video recorder.
- Switch on your TV and put the video recorder on the test signal. (See the handbook for your video recorder.)
- Search for the test signal of your video recorder in the same way as you searched for and stored the TV signals. See Installation, Searching for and storing TV channels, Manual Installation, p. 5.
- Store the test signal under a programme number.
- Replace the aerial cable in the aerial socket ⊓ of your video recorder after you have stored the test signal.

Decoder and video recorder

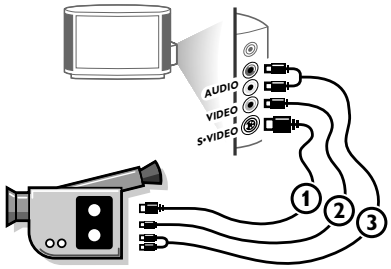
- Connect a eurocable ④ to your decoder and to the special euroconnector of your video recorder. See also the video recorder handbook.
  See Define Decoder/Descrambler prog. numbers, p. 7.
  You can also connect your decoder directly to **EXTERNAL 1** or **2** with a eurocable.

Video recorder and other peripherals (except Digital Sources)



- Connect the aerial cables ①, ② and ③ as shown opposite. Better picture quality can be obtained if you also connect eurocable ⑤ to **EXTERNAL 2** and a eurocable ④ to **EXTERNAL 1**.
- Look for the test signal of your peripheral in the same way as you do for a video recorder.

When a video recorder is connected to **EXTERNAL 1** you can only record a programme from your TV.
Only when a video recorder is connected to **EXTERNAL 2** it is possible to record a programme from your TV as well as from other connected equipment. See Record with your video recorder, p. 23.

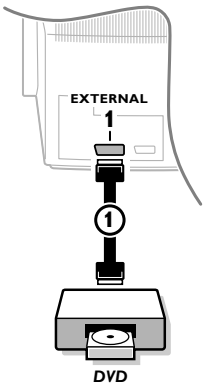


Camera and camcorder

- Connect your camera or camcorder at the right side of your TV.
- Connect the equipment to **VIDEO** (2) and **AUDIO L** (3) for mono equipment.
- Press the I-II key repeatedly to select the sound coming from one or both loudspeakers of your TV.
- For stereo equipment also connect **AUDIO R** (3) .
  S-VHS quality with a S-VHS camcorder is obtained by connecting the S-VHS cables with the **S-VIDEO** input (1) and **AUDIO** inputs (3).

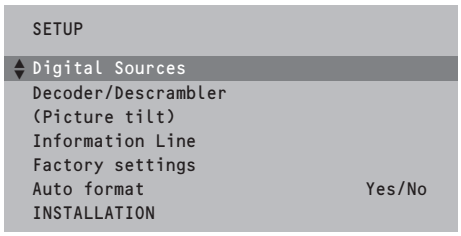
Other equipments

Connect the eurocable (1) to **EXTERNAL 1** as shown opposite.

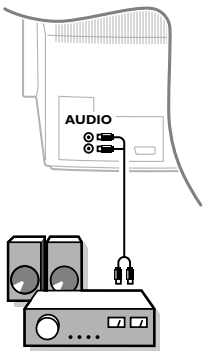


Only for Digital Sources :

- Press ⏻ and ⇳ at the same time.

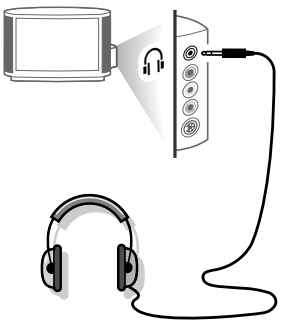


- Select **Present** in the Setup menu of the **INSTALLATION** menu.
  This offers you optimum picture quality for your digital equipment, like a DVD, a digital satellite tuner or a similar digital device.
- Press the red ● key to switch off all menus.



Audio equipment / Amplifier

- Connect the audio cables to the audio input of your audio equipment and to **AUDIO L** and **R** at the back of your TV.
  You can listen to your TV sound via your audio equipment.



Headphone

- Insert the plug into the headphone socket 🎧 at the right side of the TV.
- Press 🔇 on the remote control to switch off the internal loudspeakers of the TV.
  The headphone impedance must be between 8 and 4000 Ohm. The headphone socket has a 3.5 mm jack.

In the **SOUND** menu select **Headphone** to adjust the headphone volume and to select dubbed or original language (when the TV channel broadcasts in two languages) for your headphone sound. See p. 10.

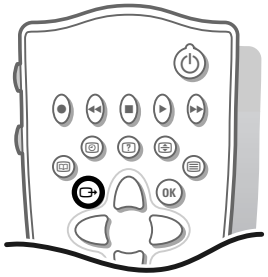
If you want to connect more equipment to your TV, consult your dealer.

To select connected equipment

If the TV is connected to a video recorder with the EasyLink function, in some cases the TV will be switched on, even when the TV was in standby. (E.g. playback tape,...) This is not possible when Child Lock On is selected.

Equipment connected with an aerial cable only :

- Select the programme number under which you have stored the test signal with the digit keys.



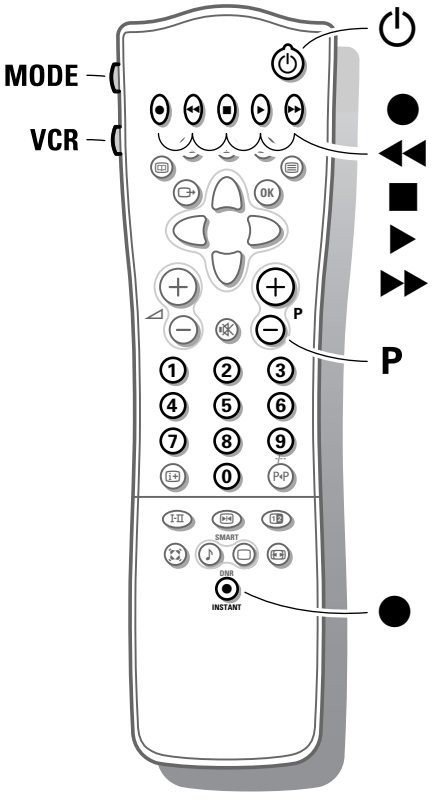
Equipment connected to a euroconnector or to the right side of the TV

- Press the ⊏→ key repeatedly to select **EXT1**, **EXT2** or **FRONT**, according to where you connected your equipment at the back or the right side of your TV.

Remark : Most equipment (decoder, video recorder, satellite receiver) carries out the switching itself.

Do you want to watch TV channels again ?

- Enter the programme number of the TV channel which you want to watch with the digit keys or press the ⊏→ key repeatedly to select **TV**.



Video recorder, DVD and satellite keys

Most of the audio and video equipment from our range of products can be operated with the remote control of your TV.

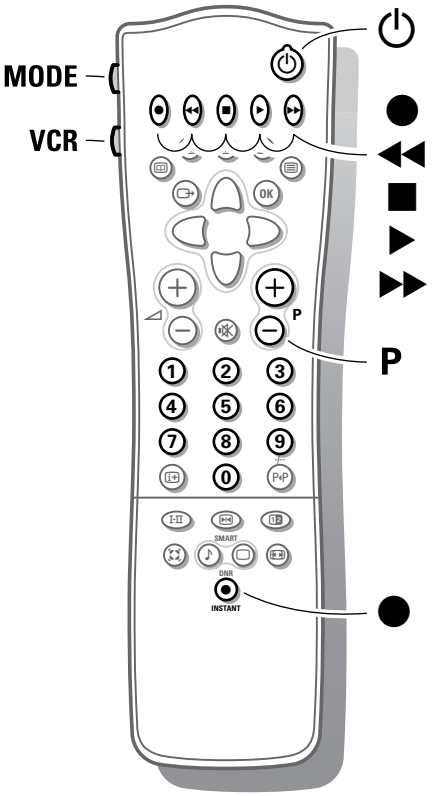
Video recorder

Keep the **VCR** key on the left side of the remote control pressed and simultaneously press:

- ● for record,
- ◀◀ for rewind,
- ■ for stop,
- ▶ for play,
- ▶▶ for fast forward,
- -/-- for selecting 1- or 2-digit programme numbers from the video recorder or DVD tuner,
- **- P +** for fast programme selection from the video recorder tuner,
- **0** to **9** to select a programme number from your video recorder tuner,
- ⏻ to switch the video recorder to standby

These keys function with equipment which use the RC5 signalling standard.

If your video recorder has the EasyLink function, the key **INSTANT** ● *for record and stop can be operated in the TV mode.*
If your EasyLink videorecorder has the system standby function and when you press the ⏻ *key for 3 seconds, both TV and the video recorder are switched to standby.*



Satellite receiver

Press the **MODE** key on the left side of the remote control.
Press the **OK** key simultaneously with the digit key 1.
Now you can operate your satellite receiver with the remote control of your TV.

Keep the **MODE** key on the left side of the remote control pressed and simultaneously press:

- to switch the **SAT** menu on or off
- -/-- to select a one or two digit programme number from the satellite receiver.

These keys function with equipment which use the RC5 signalling standard.

DVD player

Press the **MODE** key on the left side of the remote control.
Press the **OK** simultaneously with the digit key 2.
Now you can operate your DVD player with the remote control of your TV.

Keep the **MODE** key on the left side of the remote control pressed and simultaneously press:

- to switch the DVD menu on or off
- to select a DVD title
- P◂P to select a DVD chapter
- I-II to select your choice of audio language
- ◀◀ for rewind
- ■ for stop
- ▶ for play
- ▶▶ for fast forward
- 0-9 to select a programme number from your DVD

●, , , , have no function

Note: after replacing the batteries the default operational equipment is the satellite receiver.

These keys function with equipment which use the RC6 signalling standard.

Record with your video recorder without EasyLink

To record S-VHS quality, connect a S-VHS peripheral directly to the video recorder.

1. Record a TV programme

- Select the programme number on your video recorder.
- Set your video recorder to record.
  (See the handbook for your video recorder.)

Switching programme numbers on your TV does not disturb recording !

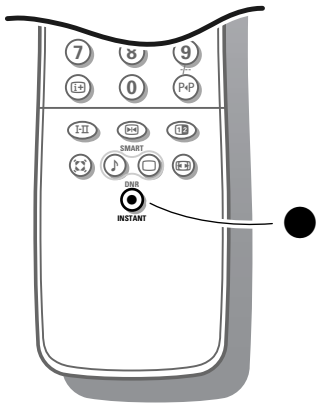
2. **Record a programme on your video recorder connected to EXTERNAL 2 from Audio/Video equipment connected to EXTERNAL 1 or to the right side**

- Switch on the equipment.
- Select the right external on your video recorder.
- Set your video recorder to record.
  You record what you are watching on the screen.

Do not switch programme numbers or do not switch off your TV when you are recording !

Record with a video recorder with EasyLink

easy LINK



If you have connected a S-VHS video recorder provided with the EasyLink function, you can record S-VHS-quality from a S-VHS peripheral connected to the right side of the TV. (E.g. from a S-VHS camcorder.)

In TV mode, it is possible to start a direct recording of the programme which is being displayed on the TV screen.

- *Press the* **INSTANT** *record key ● of the TV or of the video recorder or the record key on the video recorder.*
  The video recorder switches on when it was in standby and a message of what is being recorded appears on the screen.
  The video recorder starts recording the programme you are watching.
- *Press the* **INSTANT** ● *key again to stop the recording.*

When recording a programme from a peripheral connected to EXTERNAL 1 or FRONT, you can not select another TV programme on the screen.
To watch TV programmes again, press the programme number you want to select. twice. Then the recording is stopped and your video recorder switches to standby.

If you switch to standby during recording of a programme from a peripheral connected to EXTERNAL 1 or FRONT, the blinking lamp on the front of your TV indicates that you are still recording. The blinking stops after the recording is finished.

Record with a video recorder with NEXTVIEWLink

If your video recorder is equipped with NEXTVIEWLink, and you tagged one or more programmes to be recorded automatically in the NEXTVIEW mode, it is not necessary that the TV is in the standby mode or switched on for the recording to start.

Tips

Care of the screen

Clean the TV with a slightly damp soft cloth. Do not use abrasive solvent as it can damage the TV screen.

Poor Picture

Have you selected the correct TV system? Is your TV or house aerial located too close to loudspeakers, non-earthed audio equipment or neon lights, etc. ?
Mountains or high buildings can cause double pictures or ghost images.
Sometimes you can improve the picture quality by changing the direction of the outside aerial.
Is the picture or teletext unrecognisable? Check if you have entered the correct frequency. See Installation, p. 5.
Are brightness and contrast out of adjustment ? Select Factory settings in the Setup menu, p. 7.
Sometimes poor picture quality is possible when having activated a S-VHS camera or camcorder connected to the right side of your TV and another peripheral is connected to **EXT1** or **EXT2** at the same time. In this case switch off one of the other peripherals.

No picture

Is the aerial connected properly ? Are the plugs tightly connected in the aerial socket? Is the aerial cable in good condition and does it have suitable plugs ? Are the connection facilities to a possible second TV in good condition ? If in doubt, consult your dealer.

Remote control

If your TV no longer responds to the remote control, the batteries may be dead.
You can still use the **M** key and the -/+ keys at the top of your TV.

Menu

Have you selected the wrong menu ? Press the same key again to exit from the menu.

NEXTVIEW - No information

See Acquisition and updating of NEXTVIEW information, p. 15.

No solution

Switch your TV off and then on again.

Never attempt to repair a defective TV yourself.

Check with your dealer or call a TV technician.

End of life directives

Your new TV contains materials which can be recycled and reused.
At the end of life specialised companies can dismantle the discarded TV to concentrate the reusable materials and to minimise the amount of materials to be disposed of.
Please ensure you dispose of your old TV according to local regulations.

How to dispose of dead batteries ?

The batteries supplied do not contain the heavy metals mercury and cadmium. Nevertheless in many countries dead batteries may not be disposed of with your household waste. Please ensure you dispose of dead batteries according to local regulations.

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Lexicon

100 Hz

100 Hertz provides a superior solution to the problem of picture flicker which is particularly noticeable with larger screen sizes. In a conventional TV, the picture area is scanned 50 times a second (50 Hertz) – a frequency which is still detectable by the human eye in the form of a flickering picture. In 100 Hertz sets, the picture area is scanned at a rate of 100 times per second (100 Hertz). At this frequency, the eye cannot detect flicker, resulting in a clearer picture which is more relaxing to the eye.

Automatic Channel Installation (ACI)

Automatically installs all TV channels in the same order as offered by your cable company, provided of course that the data is transmitted. It also automatically includes programme number and programme name.
With ACI, channel installation is fully automatic, simple and fast.

Child Lock

Feature to prevent children from viewing unwanted channels.

Digital Scan

If you look at a television screen you will see small imperfections in the picture caused by line vibration. Digital Scan (an internal process) removes interline flicker. When combined with 100 Hz, you will see a totally stable image.

DNR

Digital Noise Reduction.
By encoding signals digitally in 100 Hz sets with Digital Scan it is possible to clean up picture noise. This is especially beneficial in poor signal areas and when viewing poor quality video tapes.

Easy Link

Digital 'intelligent' ESI bus-system between audio components in HiFi systems and between TV and VCR. (Scart connection required). Turns source selection and control into a one-button operation.

Easy Text

Teletext memory that automatically memorises Teletext pages and gives you instant access to them.

Euroconnector

A 21-pins connector system enabling you to simply connect various types of audio/video and computer equipment.

Menu

On-screen display of functions and facilities in a well-organised survey, which you can select using your remote control.

NEXTVIEW

NEXTVIEW is a new feature to assist the TV and VCR user in selecting the programmes she or he likes to watch from a television programme guide on the screen. It enables the user to see a description of every programme, and mark interesting programmes to be reminded (auto TV on) or recorded (NEXTVIEWLink video recorder required).

NTSC

The broadcasting system used in the USA, Japan and parts of South America and Southeast-Asia.

Smart Picture and Sound Controls

Keys on the remote control to select predefined picture and sound settings.

Sleeptimer

Function with which you can set a time period after which the TV should switch itself off to standby.

Picture Freeze

TV mode which allows you to "freeze" a certain image in order to study a specific detail at ease, e.g. to make notes of certain programme information like phone numbers.

Teletext

See also Easy Text
WST: World Standard Teletext.
FLOF: Full Level one Features. System applied by the BBC, RVE.... that provides a fast access to the teletext pages.
TOP: Table of (Teletext) Pages. German system for an easy access to the teletext pages.

Tint (or Hue in NTSC)

TV-function to modify the general colour balance between cool and warm and to adjust it according to your personal preference.

11 Liste der Abkürzungen

16:9-ARFRONT	Eingang für Bildformat 16:9 von seitlichem E/A
AFC	Automatische Frequenzregelung
AGC	AVR (Automatische Verstärkungsregelung)
AM-SOUND	Amplitudenmoduliertes Tonsignal
AUDIO-C	Audio Mitte
AUDIO-L	Audio links
AUDIO-L-PROC	Audio links aufbereitet
AUDIO-R	Audio rechts
AUDIO-R-PROC	Audio rechts aufbereitet
AUDIO-SL	Audio Surround links
AUDIO-SR	Audio Surround rechts
AUDIO-SW	Audio Subwoofer
AUX-SUPPLY	Hilfsstromquelle
BC-PROT	Strahlstromschutz
B-SC1-IN	Blau, Scartbuchse 1, In
B-SC2-IN	Blau, Scartbuchse 2, In
B-TXT	Blau, Videotext
BG	System B,G
C/16/9	Chrominanzeingang
CENTER	Verstärkerausgang Mitte
Compair	Computerunterstütztes Reparatursystem
C-7-OUT	Chrominanz auf Pin 7 der Scartbuchse (Variante)
CRT	Kathodenstrahlröhre
CSM	Customer Service Mode
CVBS	CVBS
CVBS-PIP-DS	CVBS-PIP-Doppelbildschirm
CVBS-SC1-IN	CVBS Scartbuchse 1, In
CVBS-SC2 OUT	CVBS Scartbuchse 2, Out
CVBS-SC2-IN	CVBS Scartbuchse 2, In
CVBS-SC3-IN	CVBS Scartbuchse 3, In
CVBS-TER	CVBS terrestrisch
CVBS-TXT-DS-OUT	CVBS -Videotext-Doppelbildschirm Out
CVBS-TXT-OUT	CVBS -Videotext Out
CVBS-Y-FRONT	Vordereingang für CVBS-Leuchtdichte
DAC-HOP	HOP IC des Digital/Analogwandlers
DC-PROT	Gleichspannungsschutz
DETECT	E/A-Eingang des Detektionssignals
DFU	Gebrauchsanweisung
DNR	Dynamic Noise Reduction
DSP	Digitale Signalverarbeitung
DST	Dealer Service Tool
DVD	Digital Versatile Disc
DYN-FASE-COR	Dynamischer Phasenausgleich
EHT-INFO	EHT-Info [Höchstspannungsinfo]
EPG	Elektronische Programmübersicht (= NexTView)
EW-DRIVE	Ost-West-Treibersignal
FBCSO	Ausschaltung des Feststrahlstroms
FBL-SC1-IN	Fast-Blanking-Signal für Scartbuchse 1 In
FBL-SC2-IN	Fast-Blanking-Signal für Scartbuchse 2 In
FILAMENT	Glühfaden der Kathodenstrahlröhre
FLASH	Flash-Speicher
FRAME ROTATION	Bilddrehung
FRAME-ROT +	Bilddrehung +
FRONT-C	Vordereingang, Chrominanz (SVHS)
FRONT-DETECT	Vordereingangsdetektion
FRONT-Y_CVBS	Vordereingang, Luminanz oder CVBS (SVHS)
GHOST-IN	Doppelkonturen-Annulierung In
G-SC1-IN	Grün, Scartbuchse 1, In
G-SC2-IN	Grün, Scartbuchse 2, In
G-TXT	Grün, Videotext
HA	Horizontal-Akquisition
HD	Horizontaltreiber, vom PICNIC kommend
Hdefl-1in	Horizontalablenksignal, benötigt für Gleichspannungsumschaltungen
HFB	Horizontaler Rücklaufimpuls
HFB+13V	Zeilenablenktransformator mit 13V-Wicklung an nicht gleichgerichtetem Ausgang
HIP	High-end Input Processor
HOP	High-end Output Processor
HP	Kopfhörer
I2C	Inter-integrated Circuit Bus
I2S-CL	I2S-Bustakt
I2S-DSP-IN	I2S-Digitalsignalprozessor In
I2S-DSP-OUT	I2S- Digitalsignalprozessor Out
I2S-WS	I2S -Bus-Wort-Störstreifen
IN-C_IN-R-SC2	Entweder Scartbuchse 2 für Chrominanz-In oder Scart-Pin 15 für Rot-In
IN-FRONT-SNDL	Ton links vorne In
IN-FRONT-SNDR	Ton rechts vorne In
IN-SC1-B	In, Scartbuchse 1, blau
IN-SC1-G	In, Scartbuchse 1, grün
IN-SC1-R	In, Scartbuchse 1, rot
IN-SC1-SNDL	In, Scartbuchse 1, Ton links
IN-SC1-SNDR	In, Scartbuchse 1, Ton rechts
IN-SC2-B	In, Scartbuchse 2, blau
IN-SC2-CVBS_Y	In, Scartbuchse 2, CVBS oder Luminanz (SVHS)
IN-SC2-FBL	In, Scartbuchse 2, Fast Blanking
IN-SC2-G	In, Scartbuchse 2, grün
IO-BUS	E/A-Bus
IR-LED	Treibersignal für die Service-Infrarot-LED
LDP	Zeilenablenkungsschutz
LED	LED [Leuchtdiode]
LINE-DRIVE	Zeilenablenkung
LMN	System L,M,N
LNA	Adapter für Rauschunterdrückung
LSP	Großsignalplatine
LV-	Vertikalspulensignal zur N/S-Korrekturschaltung
LV+	Vertikalspulentreibersignal von der Vertikal-Ablenkendstufe
MSP-CLOCK	Multistandard-Tonprozessor für Taktsignale
N52502	CAD-Nennung bezüglich eines anderen Unterplans
NC	Nicht angeschlossen
NVM	Nichtflüchtiger Speicher
O/C	Offene Schaltung
ON/OFF LED	Ein/Aus-Steuersignal für die LED
OSD	Bildschirmanzeige
OTC	OSD, Videotext,Control
PCB	Gedruckte Leiterplatte
PIP	Picture In Picture [Bild im Bild]
RAM	Random Access Memory [Direktzugriffsspeicher]
RC5	RC5-Signal vom Empfänger der Fernbedienung
RESET	Rücksetzsignal
RESET-AUDIO	Rücksetzsignal für Audio-IC MSP3410
RESET-AUDIO-INV	Rücksetzsignal für Audio-IC MSP3410 umgekehrt
RESET-FLASH	Flash-Speicher für Rücksetzsignal
ROM	Read Only Memory [Festspeicher]
R-SC1-IN	Rot, Scartbuchse 1, In
R-TXT	Rot, Videotext
SAM	Service Alignment Mode
S/C	Kurzschluß
Scavem	Scan Velocity Modulation
SC2-B-IN	Scartbuchse 2, blau, In
SC2-C-IN	Scartbuchse 2, Chrominanz, In
SC2FH_IFH	Sandcastle-Impuls 1FH/2FH
SC2-G-IN	Scartbuchse 2, grün, In
SC2-R-IN C-IN	Scartbuchse 1, für Rot In, bzw. Chrominanz In
SCL-F	Taktleitung des I2C-Busses, schnell (fast, für TXT)
SCL-S	Taktleitung des I2C-Busses langsam (slow)
SDA-F	Datenleitung des I2C-Busses schnell (fast, für TXT)
SDA-S	Datenleitung des I2C-Busses langsam (slow)
SDM	Service Default Mode
SELECT TO EXT2	Auswahl des Eingangs Extern 2
SELECT-AUDIO CINCH1	Auswahl von Audio über Cinch-Eingang 1
SELECT-AUDIO-CINCH2	Auswahl von Audio über Cinch-Eingang 2

11 Liste der Abkürzungen

SELECT-AUDIO-LR	Auswahl von Audio links und rechts
SERVICE-DEFAULT	Service-Pin zur Aktivierung des SDM
SERVICE-MODE	Service-Pin zur Aktivierung des SAM
SIF	Tonzwischenfrequenz
SIFM	Tonzwischenfrequenz (Mono)
SNDL-CL_VL-OUT	Ton links konstanter Pegel - variabler Pegel Out
SNDL-FRONT-IN	Ton links vorne In
SNDL-HEADPH-OUT	Ton links Kopfhörer Out
SNDL-SC1-IN	Ton links Scartbuchse 1 In
SNDL-SC1-OUT	Ton links Scartbuchse 1 Out
SNDL-SC2-IN	Ton links Scartbuchse 2 In
SNDL-SC2-OUT	Ton links Scartbuchse 2 Out
SNDL-SC3-IN	Ton links Scartbuchse 3 In
SNDL-SC4-IN	Ton links Scartbuchse 4 In
SNDR-FRONT-IN	Ton rechts vorne In
SNDR-HEADPH-OUT	Ton rechts Kopfhörer Out
SNDR-SC1-IN	Ton rechts Scartbuchse 1 In
SNDR-SC1-OUT	Ton rechts Scartbuchse 1 Out
SNDR-SC2-IN	Ton rechts Scartbuchse 2 Out
SNDR-SC2-OUT	Ton rechts Scartbuchse 2 Out
SNDR-SC3-IN	Ton rechts Scartbuchse 3 In
SNDR-SC4-IN	Ton rechts Scartbuchse 4 In
SNDS-VL-OUT	Surround Sound links variabler Pegel Out
SNDS-VR-OUT	Surround Sound rechts variabler Pegel Out
SOUND L-HEADPHONE-OUT	Ton links Kopfhörer Out
SOUND R-HEADPHONE-OUT	Ton rechts Kopfhörer Out
SOUND-ENABLE	Tonfreigabe
SSP	Kleinsignalplatine
STANDBY	Standby
STATUS1/2/3	Statussignal vom Euro-Stecker 1 bzw. 2 bzw. 3 zu µP, Signal (1,29-3,31V ist 16:9-Signal, 3,32-5,0V ist 4:3-Signal)
STBY	Standby
SW	Subwoofer
TOPIC	The Outmost Picture Improvement IC
U-DEC	U-dec (Eingangssignal für PICNIC)
U-FEAT	U-Funktionsbox (Ausgangssignal vom PICNIC)
U-OUT	U-Signal zu HOP-IC
mP	Mikroprozessor
V-DEC	V-dec (Eingangssignal für PICNIC)
VD	Vertikaltreibersignal
VDEFL-2	Vertikalablenkungsanschluß 2
VDEFL-1	Vertikalablenkungsanschluß 1
VDNEG	Negatives Vertikaltreibersignal
VDPOS	Positives Vertikaltreibersignal
V-FEAT	V-Funktionsbox (Ausgangssignal vom PICNIC)
VFB	Vertikaler Rücklaufimpuls
V-OUT	V-Signal an HOP-IC
VA	Vertikalakquisition
VD	Vertikaltreiber, vom PICNIC kommend
VREG	Optokoppler-Rückkopplungssignal
X-tal	Quarz
Y_CVBS-SC2-IN	Luminanz bzw. CVBS Scartbuchse 2 In
Y-DEC	Luminanz-dec (Eingangssignal für PICNIC)
Y-FEAT	Luminanz-Funktionsbox (Ausgangssignal vom PICNIC)
Y-OUT	Luminanzsignal an HOP-IC

12 Spare parts list

Large Signal Panel [A1] [A2] [A3] [A4] [E]

Various

	4822 310 11234	Supply repair kit
	4822 310 11235	Standby supply repair kit
	4822 310 11236	Line repair kit
0125	4822 695 00005	Insulating plate
0050	4822 492 70789	Spring fix transistor
0057	4822 492 63524	Spring fix transistor
0059Δ	4822 492 62076	Spring fix transistor
0060	4822 492 70871	Spring fix transistor
0149Δ	4822 265 11253	Holder for fuse
0151Δ	4822 256 91766	Led holder
0201	4822 265 11236	2P male
0202Δ	4822 267 10775	2P male black
0241	4822 267 10962	11P male v
0245	4822 267 10963	3P male v
0303Δ	4822 267 10774	2P male red
0310	4822 267 10964	9P male v red
0311	4822 265 41113	7P v dipmate
0315	4822 267 10965	9P v dipmate
0317	4822 267 10966	4P2 male v
0324	4822 265 30735	5P v dipmate
0325	4822 267 10967	3P male v
0328	4822 267 10968	11P v dipmate
0335	4822 267 10969	3P male v red
0393	4822 267 10971	5P male v
0411	4822 323 10451	Wire 7P 340mm
0415	4822 323 10452	Wire 9P 280mm dip
0424	4822 323 10453	Wire 5P 400mm dip
0428	4822 323 10454	Wire 11P 340mm dip
1002Δ	4822 280 10375	Relay 1P 5V 10A
1010Δ	4822 280 10375	Relay 1P 5V 10A
1050	4822 130 91478	IR receiver TSOP1736KD1
1051Δ	4822 276 14024	Mains switch 2P 4/ 128A
1052Δ	4822 253 30467	Fuse 6,3A
1053Δ	4822 070 33152	Fuse 3.15A
1201	4822 252 11169	Fuse 4A
1220Δ	4822 071 55002	Fuse 5A
1221Δ	4822 071 54002	Fuse 4A
1460Δ	4822 252 51186	Fuse 2A
1501	4822 252 60151	Surge protection

⊣⊢

2007Δ	4822 122 33177	10nF 20% 50V
2009Δ	4822 122 33177	10nF 20% 50V
2010Δ	4822 124 40196	220µF 20% 16V
2012	4822 124 81151	22µF 50V
2013	4822 126 13296	100nF 10% 16V
2051	4822 124 41584	100µF 20% 10V
2053Δ	4822 126 13589	470nF 275V
2100	4822 124 12295	4,7µF 20% 450V
2101	4822 122 33531	2,2nF 10% 50V
2102	5322 121 42498	680nF 5% 63V
2104	4822 123 14025	16V 2200µF 20%
2105	4822 122 33175	2,2nF 20% 50V
2201	4822 122 31177	470pF 10% 500V
2202	4822 122 31177	470pF 10% 500V
2203	4822 122 31177	470pF 10% 500V
2220	4822 124 12296	2200µF 20% 25V
2221	4822 124 12296	2200µF 20% 25V
2222	4822 124 11908	2200µF 20% 25V
2223	4822 123 14026	35V 470µF 20%
2224	4822 124 40242	1µF 20% 63V
2225	4822 121 41857	10nF 5% 250V
2226	5322 121 42386	100nF 5% 63V
2227	4822 122 31177	470pF 10% 500V
2228	4822 124 81151	22µF 50V
2229	5322 122 32331	1nF 10% 100V
2232Δ	4822 122 33177	10nF 20% 50V
2233Δ	4822 122 33177	10nF 20% 50V
2234	4822 123 14026	35V 470µF 20%
2400	4822 124 11575	47µF 20% 160V
2410Δ	5322 122 32261	4,7nF 10% 100V
2411Δ	4822 122 33177	10nF 20% 50V
2412	4822 126 12105	33nF 5% 63V
2413	4822 124 80068	22µF 20% 100V
2414	4822 126 12105	33nF 5% 63V
2416	4822 126 13296	100nF 10% 16V
2417	4822 126 13296	100nF 10% 16V
2418Δ	4822 126 14078	220pF 10% 2kV
2419Δ	5322 121 44151	33nF 10% 400V
2420	4822 121 70594	1nF 5% 2kV
2422	4822 121 10805	1,2µF 5% 250V
2425	4822 121 70398	11nF 5% 2kV
2426	4822 121 10551	27nF 5% 630V.
2430	4822 122 31175	1nF 10% 500V
2431	4822 122 31175	1nF 10% 500V
2433Δ	4822 121 40479	390nF 10% 250V
2436	4822 124 81029	100µF 20% 25V
2437	4822 124 81089	2,2µF 20% 160V
2438	4822 126 12105	33nF 5% 63V
2440	4822 126 11501	1,5nF 10% 500V
2442	4822 124 12297	4,7µF 20% 350V
2448Δ	5322 122 32654	22nF 10% 63V
2450Δ	4822 121 40518	100nF 10% 250V
2454	4822 126 13296	100nF 10% 16V
2457	4822 126 13296	100nF 10% 16V
2460	4822 126 11501	1,5nF 10% 500V
2461	4822 124 11909	25V 470µF 20%
2462	4822 123 14023	25V 3300µF 20%
2463	4822 126 11501	1,5nF 10% 500V
2465	4822 126 11501	1,5nF 10% 500V
2466	4822 124 11909	25V 470µF 20%
2480	4822 124 40763	2,2µF 100 V
2481	5322 122 32311	470pF 10% 100V
2482	4822 124 22466	1µF 20% 50V
2484Δ	4822 124 40246	4,7µF 20% 63V
2487Δ	4822 124 41579	10µF 20% 50V
2504Δ	4822 121 10711	100nF 20% 275V
2505Δ	4822 124 42029	150µF 20% 385V
2506Δ	4822 121 10711	100nF 20% 275V
2508	4822 124 11913	22nF 20% 275V
2511	4822 126 14153	2,2nF 10%B 1kV
2512	4822 126 14153	2,2nF 10%B 1kV
2521	5322 121 42386	100nF 5% 63V
2522	5322 122 32331	1nF 10% 100V
2524	5322 121 42386	100nF 5% 63V
2525	4822 124 22263	220µF 20% 25V
2526	5322 122 32311	470pF 10% 100V
2527	4822 122 31175	1nF 10% 500V
2531	4822 121 43066	1nF 1% 400V
2532	4822 122 31237	82pF 2% 100V
2533	4822 124 81151	22µF 50V
2535	4822 126 12451	820pF 10% 50V
2538	4822 122 33531	2,2nF 10% 50V
2540Δ	4822 126 14078	220pF 10% 2kV
2541	4822 122 31177	470pF 10% 500V
2542Δ	4822 126 14078	220pF 10% 2kV
2543Δ	4822 126 13451	2,2nF 10% 2kV
2544	4822 121 70584	1,8nF 5% 2kV
2545	4822 126 11824	100pF 10% 1kV
2550Δ	4822 126 14504	3,3nF 20% 250V
2557	4822 121 43145	33nF 10% 50V
2568Δ	4822 126 14237	470pF 10% 2kV
2569	4822 124 81042	47µF 50-20% 200V
2580	4822 126 13296	100nF 10% 16V
2612	5322 122 34099	470pF 10% 63V
2613	5322 122 34099	470pF 10% 63V
2615	4822 124 40255	100µF 20% 63V
2616Δ	4822 126 10002	100nF 20% 25V
2617	4822 121 42408	220nF 5% 63V
2618Δ	4822 126 13838	100nF 50V 20%
2620	4822 124 81166	10µF 20% 100V
2700Δ	5322 126 10223	4,7nF 10% 63V
2702Δ	5322 126 10223	4,7nF 10% 63V
2710	4822 126 12105	33nF 5% 63V
2711	4822 121 42408	220nF 5% 63V
2712Δ	4822 126 10002	100nF 20% 25V
2713Δ	4822 126 10002	100nF 20% 25V
2715	4822 121 42408	220nF 5% 63V
2716	4822 126 13751	47nF 10% 63V
2720	4822 126 12105	33nF 5% 63V
2721	4822 121 42408	220nF 5% 63V
2722	4822 121 42408	220nF 5% 63V
2723	4822 126 13751	47nF 10% 63V
2730	4822 121 51319	1µF 10% 63V
2731	5322 122 31865	1,5nF 10% 63V
2732	4822 121 51319	1µF 10% 63V
2733	5322 122 31865	1,5nF 10% 63V
2753	4822 126 13061	220nF 20% 25V
2754	4822 126 13061	220nF 20% 25V
2755	4822 126 13061	220nF 20% 25V
2756	4822 126 13061	220nF 20% 25V
2757	4822 126 13061	220nF 20% 25V
2758	4822 124 40242	1µF 20% 63V
2760	4822 124 80408	4,7µF 20% 50V
2761Δ	4822 124 41579	10µF 20% 50V
2780Δ	4822 126 10002	100nF 20% 25V
2781Δ	4822 126 10002	100nF 20% 25V
2782	4822 126 13061	220nF 20% 25V
2783Δ	4822 124 41579	10µF 20% 50V
2784Δ	4822 124 41579	10µF 20% 50V
2791	4822 124 22263	220µF 20% 25V
2792	4822 124 22263	220µF 20% 25V

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3002	4822 117 12181	470Ω 20% 0,5W
3003	4822 117 11449	2k2 1% 0,1W
3005	4822 117 12074	7W 1Ω5 10%
3007Δ	4822 051 20472	4k7 5% 0,1W
3008	4822 116 52256	2k2 5% 0,5W
3009	4822 117 10833	10k 1% 0,1W
3010	4822 051 20224	220k 5% 0,1W
3011	4822 117 10833	10k 1% 0,1W
3012	4822 051 10102	1k 2% 0,25W
3013	4822 051 10102	1k 2% 0,25W
3014	4822 051 10102	1k 2% 0,25W
3015Δ	4822 051 20101	100Ω 5% 0,1W
3016Δ	4822 051 20101	100Ω 5% 0,1W
3017	4822 051 20479	47Ω 5% 0,1W
3018	4822 117 11449	2k2 1% 0,1W
3050	4822 051 20331	330Ω 5% 0,1W
3051Δ	4822 051 20471	470Ω 5% 0,1W
3054	4822 051 20561	560Ω 5% 0,1W
3055Δ	4822 051 20008	0Ω jumper (0805)
3056Δ	4822 116 10065	1M A/495V MAX 850V
3057Δ	4822 053 21335	3M3 5% 0,5W
3058	4822 051 20474	470k 5% 0,1W
3059	4822 117 11507	6k8 1% 0,1W
3061Δ	4822 051 20332	3k3 5% 0,1W
3063Δ	4822 052 10478	4Ω7 5% 0,33W
3064Δ	4822 052 10478	4Ω7 5% 0,33W
3066Δ	4822 053 21335	3M3 5% 0,5W
3076	4822 117 11507	6k8 1% 0,1W
3077	4822 117 10833	10k 1% 0,1W
3080	4822 117 10833	10k 1% 0,1W
3101	4822 053 20106	10M 5% 0,25W
3102	4822 050 11002	1k 1% 0,4W
3103	4822 116 83864	10k 5% 0,5W
3104	4822 116 52234	100k 5% 0,5W
3106	4822 116 52234	100k 5% 0,5W
3107	4822 116 52234	100k 5% 0,5W
3108	4822 116 52182	15Ω 5% 0,5W
3109	4822 116 83864	10k 5% 0,5W
3110Δ	4822 052 10109	10Ω 5% 0,33W
3111	4822 116 52283	4k7 5% 0,5W
3113Δ	4822 051 20471	470Ω 5% 0,1W
3115	4822 117 11139	1k5 1% 0,1W
3117	4822 116 52175	100Ω 5% 0,5W
3118	4822 116 52182	15Ω 5% 0,5W
3222	4822 116 52249	1k8 5% 0,5W
3223	4822 116 52249	1k8 5% 0,5W
3224	4822 116 52249	1k8 5% 0,5W
3225Δ	4822 117 11744	0Ω22 5% 1W
3226Δ	4822 050 21002	1k 1% 0,6W
3227Δ	4822 050 23302	3k3 1% 0,6W
3228	4822 116 52234	100k 5% 0,5W
3231Δ	4822 052 10109	10Ω 5% 0,33W
3234	4822 116 52219	330Ω 5% 0,5W
3240	4822 116 52226	560Ω 5% 0,5W
3241	4822 116 52226	560Ω 5% 0,5W
3245	4822 116 83874	220k 5% 0,5W
3404	4822 116 83883	470Ω 5% 0,5W
3406	4822 117 10834	47k 1% 0,1W
3407	4822 117 10833	10k 1% 0,1W
3411	4822 116 52195	47Ω 5% 0,5W
3413	4822 116 83883	470Ω 5% 0,5W
3414Δ	4822 051 20101	100Ω 5% 0,1W
3415	4822 117 13518	18Ω 5% 2,5W
3417	4822 116 52176	10Ω 5% 0,5W
3420Δ	4822 052 11479	47Ω 5% 0,5W
3423	4822 053 10688	6Ω8 5% 1W
3425	4822 116 52176	10Ω 5% 0,5W
3426	4822 116 52176	10Ω 5% 0,5W
3428	4822 116 52245	150k 5% 0,5W
3429	4822 116 83884	47k 5% 0,5W
3430	4822 050 11002	1k 1% 0,4W
3431	4822 050 11002	1k 1% 0,4W
3432	4822 116 83884	47k 5% 0,5W
3436Δ	4822 051 20332	3k3 5% 0,1W
3437	4822 116 52245	150k 5% 0,5W
3438	4822 051 20333	33k 5% 0,1W
3443Δ	4822 052 11688	6Ω8 5% 0,5W
3448	4822 051 20104	100k 5% 0,1W
3449	4822 117 10834	47k 1% 0,1W
3450	4822 116 83884	47k 5% 0,5W
3451	4822 116 52264	27k 5% 0,5W
3452	4822 116 52257	22k 5% 0,5W
3454	4822 117 10834	47k 1% 0,1W
3455	4822 116 83874	220k 5% 0,5W
3457	4822 051 20564	560k 5% 0,1W
3458	4822 051 20104	100k 5% 0,1W
3459Δ	4822 051 20471	470Ω 5% 0,1W
3462Δ	4822 052 11108	1Ω 5% 0,5W
3463Δ	4822 052 11108	1Ω 5% 0,5W
3464	4822 116 52283	4k7 5% 0,5W
3466Δ	4822 052 10108	1Ω 5% 0,33W
3468Δ	4822 052 10151	150Ω 5% 0,33W
3478	4822 116 83872	220Ω 5% 0,5W
3480	4822 051 20104	100k 5% 0,1W
3481Δ	4822 052 10102	1k 5% 0,33W
3482	4822 116 83884	47k 5% 0,5W
3483Δ	4822 052 10478	4Ω7 5% 0,33W
3484Δ	4822 052 10109	10Ω 5% 0,33W
3485	4822 050 25605	5M6 1% 0,6W
3486	4822 051 20104	100k 5% 0,1W
3488	4822 051 10102	1k 2% 0,25W
3489	4822 116 52191	33Ω 5% 0,5W
3490	4822 051 20224	220k 5% 0,1W
3491	4822 116 83874	220k 5% 0,5W
3492	4822 051 20333	33k 5% 0,1W
3493	4822 051 10102	1k 2% 0,25W
3498Δ	4822 052 10221	220Ω 5% 0,33W
3506Δ	4822 117 12027	18Ω-3k 25%
3507Δ	4822 117 12027	18Ω-3k 25%
3512	4822 050 11002	1k 1% 0,4W
3517	4822 053 10104	100k 5% 1W
3518	4822 116 52195	47Ω 5% 0,5W
3519	4822 116 52256	2k2 5% 0,5W
3520	4822 117 11743	27k 5% 3W
3521	4822 116 52304	82k 5% 0,5W
3522	4822 116 52228	680Ω 5% 0,5W
3523	4822 116 52244	15k 5% 0,5W
3524Δ	4822 052 10109	10Ω 5% 0,33W
3525	4822 116 83874	220k 5% 0,5W
3526	4822 116 52175	100Ω 5% 0,5W
3527	4822 116 52191	33Ω 5% 0,5W
3529	4822 053 20105	1M 5% 0,25W
3530Δ	4822 052 10108	1Ω 5% 0,33W
3531	4822 116 52207	1k2 5% 0,5W
3532	4822 116 83868	150Ω 5% 0,5W
3533	4822 116 52238	12k 5% 0,5W
3535	4822 116 52244	15k 5% 0,5W
3536	4822 116 52257	22k 5% 0,5W
3537	4822 116 83864	10k 5% 0,5W
3538	4822 050 11002	1k 1% 0,4W
3539	4822 116 83864	10k 5% 0,5W
3540Δ	4822 050 24708	4Ω7 1% 0,6W
3541	4822 050 11002	1k 1% 0,4W
3544	4822 117 11488	33k 5% 3W
3545	4822 117 12235	680 Ω 5% 4,8W.
3546	4822 117 11745	0Ω39 5% 1W
3547	4822 117 11745	0Ω39 5% 1W
3548	4822 116 52195	47Ω 5% 0,5W
3552	4822 116 52175	100Ω 5% 0,5W
3553	4822 116 52283	4k7 5% 0,5W
3555	4822 050 21604	160k 1% 0,6W
3556	4822 116 52175	100Ω 5% 0,5W
3557	4822 116 52271	33k 5% 0,5W
3558Δ	4822 050 22702	2k7 1% 0,6W
3559	4822 101 11186	470Ω 30%LIN 0.1W
3566	4822 053 10683	68k 5% 1W
3567	4822 116 52257	22k 5% 0,5W
3568Δ	4822 053 12153	15k 5% 3W
3569	4822 116 52257	22k 5% 0,5W
3579	4822 116 80176	1Ω 5% 0,5W
3580	4822 116 52175	100Ω 5% 0,5W
3581Δ	4822 051 20101	100Ω 5% 0,1W
3582	4822 051 10102	1k 2% 0,25W
3601	4822 116 80676	1Ω5 5% 0,5W
3602	4822 116 80676	1Ω5 5% 0,5W
3603	4822 117 11777	1Ω8 5%
3609	4822 052 10332	3k3 5% 0,33W
3610	4822 051 10102	1k 2% 0,25W
3611	4822 050 28201	820Ω 1% 0,6W
3612	4822 050 28201	820Ω 1% 0,6W
3613	4822 051 10102	1k 2% 0,25W
3614	4822 051 10102	1k 2% 0,25W
3617Δ	4822 052 10158	1Ω5 5% 0,33W
3618	4822 116 83872	220Ω 5% 0,5W
3619	4822 116 83872	220Ω 5% 0,5W
3620	4822 116 83864	10k 5% 0,5W
3700	4822 051 10102	1k 2% 0,25W
3701	4822 117 11448	180Ω 1% 0,1W
3702	4822 051 10102	1k 2% 0,25W
3703	4822 117 11448	180Ω 1% 0,1W
3710	4822 051 20104	100k 5% 0,1W
3711	4822 117 10833	10k 1% 0,1W
3712	4822 051 20822	8k2 5% 0,1W
3713	4822 117 11149	82k 1% 0,1W
3714	4822 051 20562	5k6 5% 0,1W 0805
3720	4822 051 20104	100k 5% 0,1W
3721	4822 117 10833	10k 1% 0,1W
3722	4822 051 20822	8k2 5% 0,1W
3723	4822 117 11149	82k 1% 0,1W
3724	4822 051 20562	5k6 5% 0,1W 0805
3730Δ	4822 051 20471	470Ω 5% 0,1W
3731	4822 117 11507	6k8 1% 0,1W
3732Δ	4822 051 20471	470Ω 5% 0,1W
3733	4822 117 11507	6k8 1% 0,1W
3749Δ	4822 051 20332	3k3 5% 0,1W
3750	4822 116 52263	2k7 5% 0,5W
3751	4822 117 10833	10k 1% 0,1W
3752	4822 117 11449	2k2 1% 0,1W
3757	4822 117 11507	6k8 1% 0,1W
3762	4822 051 20828	8Ω2 5% 0,1W
3763	4822 051 20104	100k 5% 0,1W
3764	4822 051 20104	100k 5% 0,1W
3765	4822 051 20104	100k 5% 0,1W
3766	4822 051 20104	100k 5% 0,1W
3767	4822 117 10834	47k 1% 0,1W
3768	4822 117 10834	47k 1% 0,1W
3769	4822 116 83883	470Ω 5% 0,5W
3770	4822 116 52207	1k2 5% 0,5W
3786	4822 051 20104	100k 5% 0,1W
3788	4822 051 20104	100k 5% 0,1W
3789	4822 051 20828	8Ω2 5% 0,1W
4xxx	4822 051 10008	0Ω jumper (1206)
4xxx	4822 051 20008	0Ω jumper (0805)

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5003	4822 157 11769	Mains filter DMF3530HB60
5101Δ	4822 146 11065	Stand-by transf. CE165T
5102	4822 157 70436	8,2µH 10%
5205	4822 152 20678	33µH 5%
5220	4822 157 11771	Bead 200MHz
5221	4822 157 11771	Bead 200MHz
5222	4822 157 71453	27µH 10%
5223	4822 157 71453	27µH 10%
5224	4822 157 71453	27µH 10%
5225	4822 157 11772	Bridge coil
5226	4822 157 11411	Bead 100MHz
5227	4822 157 11771	Bead 200MHz
5230	4822 157 11411	Bead 100MHz
5231	4822 157 11771	Bead 200MHz
5400	4822 157 71467	39µH 10%
5410	4822 146 11066	Line driver transf.
5421	4822 157 11182	Linearity corr.

12 Spare parts list

5422	4822 157 71829	Bridge coil
5423	4822 157 71097	0.56µH
5425	4822 157 11411	Bead 100MHz
5430Δ	4822 140 10559	L.O.T.
5460	4822 157 71466	2,2µH 20%
5462	4822 157 71466	2,2µH 20%
5466	4822 157 71452	18µH 10%
5468	4822 157 71452	18µH 10%
5480	4822 157 63253	Choke
5525Δ	4822 157 50963	2,2µH
5542	4822 157 11411	Bead 100MHz
5544	4822 157 11771	Bead 200MHz
5545	4822 157 11411	Bead 100MHz
5550Δ	4822 146 11067	FFS transformer
5567	4822 157 11411	Bead 100MHz
5573	4822 157 71453	27µH 10%
5617	4822 157 11771	Bead 200MHz

6006	4822 130 11397	BAS316
6008	4822 130 11397	BAS316
6010	4822 130 11397	BAS316
6011	4822 130 11397	BAS316
6012	4822 130 11397	BAS316
6014	4822 130 11397	BAS316
6015	4822 130 11397	BAS316
6051	4822 209 72895	TLUV5320
6052	4822 130 11409	TSIL6403
6053	4822 130 11411	BZX284-C3V3
6101	4822 130 83147	DF06M
6103	4822 130 42488	BYD33D
6104Δ	4822 130 34499	BZX79-B20
6105	4822 130 34281	BZX79-B15
6107	5322 130 31938	BYV27-200
6108Δ	4822 130 30621	1N4148
6213Δ	4822 130 30621	1N4148
6218Δ	4822 130 80791	BYV28-200/20
6219Δ	4822 130 80791	BYV28-200/20
6222	5322 130 32677	1N5822
6223	4822 130 11045	PBYR10100
6407	4822 130 42488	BYD33D
6408	4822 130 42488	BYD33D
6409	4822 130 11397	BAS316
6420	4822 130 83801	PBYR745F
6421	4822 130 10753	BY359X-1500
6422	4822 130 10754	BY229X-600
6437	4822 130 11397	BAS316
6441	4822 130 42488	BYD33D
6451	4822 130 11413	PDZ10B
6452	4822 130 11397	BAS316
6453	4822 130 11414	BZX284-C27
6454	4822 130 30842	BAV21
6460	5322 130 31938	BYV27-200
6462	5322 130 31938	BYV27-200
6463	5322 130 31938	BYV27-200
6464	4822 130 34174	BZX79-B4V7
6465Δ	4822 130 34173	BZX79-B5V6
6480Δ	4822 130 61219	BZX79-B10
6483	4822 130 30842	BAV21
6484	4822 130 11397	BAS316
6485	4822 130 11397	BAS316
6486	4822 130 11397	BAS316
6514	4822 130 11185	GBU4J
6521	4822 130 42488	BYD33D
6524	4822 130 32245	BYV10-40
6525	4822 130 42488	BYD33D
6542	4822 130 42606	BYD33J
6545	4822 130 11415	BYV28-400/20
6567	4822 130 10218	BY229X-800
6570Δ	4822 130 30621	1N4148
6571Δ	4822 130 30621	1N4148
6572	4822 130 32904	BZV85-C5V6
6580	4822 130 11416	PDZ6.8B
6581	4822 130 11031	BZX284-C12
6608	4822 130 10648	BZX284-C5V6
6609	4822 130 10654	BAT254
6614	5322 130 31938	BYV27-200
6617	4822 130 42488	BYD33D
6618	5322 130 33635	BZV85-C8V2
6620	4822 130 42488	BYD33D
6700	4822 130 11397	BAS316
6701	4822 130 11397	BAS316
6710	4822 130 11397	BAS316
6711	4822 130 11397	BAS316
6767Δ	4822 209 80817	L7805CV
6768	4822 130 82714	BZX79-B2V7
6769	4822 130 82714	BZX79-B2V7
6770	4822 209 11079	MC79M05CT

7000Δ	4822 130 40981	BC337-25
7001	4822 130 60511	BC847B
7011	4822 130 60511	BC847B
7012	4822 130 60511	BC847B
7013	5322 130 60508	BC857B
7014	4822 130 60511	BC847B
7020Δ	4822 130 40981	BC337-25
7050	4822 130 41246	BC327-25
7100	4822 130 44568	BC557B
7101	4822 130 40959	BC547B
7102	4822 130 11417	STP3NB60FP
7103	4822 130 40959	BC547B
7104Δ	4822 130 11418	TCDT1102G
7212	4822 209 60059	NJM2360D
7213	4822 209 90281	L78M08CP
7409	4822 130 40959	BC547B
7411	5322 130 44349	BC635
7421Δ	4822 130 63666	BU2520DF
7437	5322 130 60508	BC857B
7480	4822 130 63726	MTP3055EFI
7484	4822 209 70672	LM358N SEL.
7520Δ	4822 209 90025	MC44603P
7540	4822 130 11419	STW8NA60
7555	4822 209 81397	TL431CLPST
7556Δ	4822 130 11418	TCDT1102G
7580	4822 130 11421	BT151X-500R
7600	4822 209 90009	TDA8177
7710Δ	4822 209 83163	LM833N
7740	4822 209 32641	TDA2616Q
7761	4822 130 60511	BC847B
7762	5322 130 60508	BC857B
7790	4822 130 60511	BC847B
7796	4822 130 60511	BC847B

Picture tube + SCAVEM panel [F]

Various

0041	4822 492 70788	Spring fix IC
0224	4822 267 10972	5P male v
0298	4822 255 10415	CRT socket DAF 32"
0299Δ	4822 267 10922	CRT socket 24"/25"/28"/29"
0334	4822 267 10973	1P male v
0340	4822 267 10974	9P male v
0383	4822 267 10967	3P male v
1030	3104 328 00320	PTP 6101, polyg
1030	3104 328 00340	PTP+SVM 6101, polyg
1030	3104 328 00360	PTP+SVM 6101, DAF
1030	3104 328 00380	PTP+SVM 6111, polyg
1030	3104 328 00400	PTP+SVM 6111, DAF

2325Δ	4822 124 41579	10µF 20% 50V
2330	4822 126 13486	15pF 2% 63V
2331	5322 126 10343	1,8pF 5% 63V
2332Δ	5322 126 10223	4,7nF 10% 63V
2333	4822 122 32535	680pF 10% 63V
2336	4822 126 12105	33nF 5% 63V
2337	4822 121 40411	33nF 10% 400V
2338	5322 126 10184	680P 5% 50V.
2340	4822 126 13486	15pF 2% 63V
2341	5322 126 10343	1,8pF 5% 63V
2342Δ	5322 126 10223	4,7nF 10% 63V
2343	4822 122 32535	680pF 10% 63V
2346	4822 126 12105	33nF 5% 63V
2347	4822 121 40411	33nF 10% 400V
2348	4822 126 13461	680pF 10% 50V
2350	4822 126 13486	15pF 2% 63V
2351	5322 122 31873	2,7pF +-0,5 100V
2352Δ	5322 126 10223	4,7nF 10% 63V
2353	4822 122 32535	680pF 10% 63V
2356	4822 126 12105	33nF 5% 63V
2357	4822 121 40411	33nF 10% 400V
2358	4822 126 13461	680pF 10% 50V
2370	4822 124 11565	10µF 20% 250V
2371Δ	5322 122 32654	22nF 10% 63V
2372	4822 124 81029	100µF 20% 25V
2374Δ	5322 122 32654	22nF 10% 63V
2376Δ	4822 124 41579	10µF 20% 50V
2381	4822 122 31175	1nF 10% 500V
2393Δ	5322 122 34123	1nF 10% 50V
2397Δ	4822 126 13862	1,5nF 10% 2kV
2398	4822 126 14505	4,7nF 10% 2kV
2400	4822 124 81029	100µF 20% 25V
2401	4822 126 13486	15pF 2% 63V
2402	4822 126 13689	18pF 1% 63V
2403	5322 122 32658	22pF 5% 50V
2404Δ	4822 124 40433	47µF 20% 25V
2405	5322 122 32286	3,3pF 5% 50V
2406	5322 121 42386	100nF 5% 63V
2407	5322 122 31863	330pF 5% 50V
2409	4822 121 70619	22nF 10% 50V
2410Δ	5322 122 32654	22nF 10% 63V
2411	4822 124 40764	22µF 100V
2420	4822 121 41856	22nF 5% 250V
2422	4822 126 13693	56pF 1% 63V

3324	4822 117 10833	10k 1% 0,1W
3325	4822 051 20182	1k8 5% 0,1W
3327	4822 051 20104	100k 5% 0,1W
3329	4822 116 83864	10k 5% 0,5W
3330	4822 117 11449	2k2 1% 0,1W
3331	4822 050 21204	120k 1% 0,6W
3332	4822 117 12955	2k7 1% 0,1W 0805
3333	4822 117 11448	180Ω 1% 0,1W
3334	4822 116 52175	100Ω 5% 0,5W
3335	4822 117 12516	680Ω 2%0,5W
3336	4822 051 20391	390Ω 5% 0,1W
3338	4822 051 10102	1k 2% 0,25W
3339	4822 050 11002	1k 1% 0,4W
3340	4822 117 11449	2k2 1% 0,1W
3341	4822 050 21204	120k 1% 0,6W
3342	4822 117 12955	2k7 1% 0,1W 0805
3343	4822 117 11448	180Ω 1% 0,1W
3344	4822 116 52175	100Ω 5% 0,5W
3345	4822 117 12516	680Ω 2%0,5W
3346	4822 051 20391	390Ω 5% 0,1W
3348	4822 051 10102	1k 2% 0,25W
3349	4822 050 11002	1k 1% 0,4W
3350	4822 117 11449	2k2 1% 0,1W
3351	4822 050 21204	120k 1% 0,6W
3352	4822 117 12955	2k7 1% 0,1W 0805
3353	4822 117 11448	180Ω 1% 0,1W
3354	4822 116 52175	100Ω 5% 0,5W
3355	4822 117 12516	680Ω 2%0,5W
3356	4822 116 83881	390Ω 5% 0,5W
3358	4822 050 11002	1k 1% 0,4W
3359	4822 050 11002	1k 1% 0,4W
3360	4822 116 52195	47Ω 5% 0,5W
3363Δ	4822 051 20008	0Ω jumper . (0805)
3364Δ	4822 051 20008	0Ω jumper . (0805)
3369	4822 051 20184	180k 5% 0,1W
3370	4822 051 20154	150k 5% 0,1W
3371	4822 050 11002	1k 1% 0,4W
3372Δ	4822 052 10688	6Ω8 5% 0,33W
3373Δ	4822 052 10331	330Ω 5% 0,33W
3374	4822 051 20224	220k 5% 0,1W
3375	4822 051 20104	100k 5% 0,1W
3376	4822 051 20104	100k 5% 0,1W
3377	4822 051 20104	100k 5% 0,1W
3378	4822 117 11719	180k
3379	4822 051 20562	5k6 5% 0,1W 0805
3382	4822 116 52191	33Ω 5% 0,5W
3383	4822 117 13016	1M A/50V MAX 115V
3385	4822 117 13016	1M A/50V MAX 115V
3386	4822 116 52191	33Ω 5% 0,5W
3396Δ	4822 051 20101	100Ω 5% 0,1W
3397	4822 117 11896	1k5 20% 0,5W
3400Δ	4822 052 10109	10Ω 5% 0,33W
3401Δ	4822 051 20332	3k3 5% 0,1W
3402	4822 117 12955	2k7 1% 0,1W 0805
3403	4822 117 11449	2k2 1% 0,1W
3404	4822 117 11448	180Ω 1% 0,1W
3405	4822 117 10965	18k 1% 0,1W
3406	4822 117 11449	2k2 1% 0,1W
3407	4822 116 52219	330Ω 5% 0,5W
3408	4822 051 20479	47Ω 5% 0,1W
3409	4822 051 20478	4Ω7 5% 0,1W
3410	4822 051 10102	1k 2% 0,25W
3411	4822 117 11148	56k 1% 0,1W
3412	4822 117 11148	56k 1% 0,1W
3413	4822 051 10102	1k 2% 0,25W
3414	4822 053 12472	4k7 5% 3W
3415Δ	4822 051 20109	10Ω 5% 0,1W
3416	4822 051 20182	1k8 5% 0,1W
3417Δ	4822 051 20109	10Ω 5% 0,1W
3418	4822 051 20331	330Ω 5% 0,1W
3419	4822 116 52219	330Ω 5% 0,5W
3421	4822 051 10102	1k 2% 0,25W
3999	4822 051 20331	330Ω 5% 0,1W
3999	4822 117 10353	150Ω 1% 0,1W
3999	4822 117 11448	180Ω 1% 0,1W
3999	4822 117 11503	220Ω 1% 0.1W
3999	4822 117 11504	270Ω 1% 0.1W
4xxx	4822 051 10008	0Ω jumper (1206)
4xxx	4822 051 20008	0Ω jumper (0805)

5372	4822 157 51216	5,6µH 10%
5373	4822 157 51216	5,6µH 10%
5400	4822 157 51216	5,6µH 10%
5404	4822 157 71304	1µH 10%
5414Δ	4822 050 24701	470Ω 1% 0,6W

6324Δ	4822 130 30621	1N4148
6325	5322 130 31504	BZX79-B3V3
6335	4822 130 30842	BAV21
6345	4822 130 30842	BAV21
6355	4822 130 30842	BAV21
6370	4822 130 34281	BZX79-B15
6371Δ	4822 130 30621	1N4148
6409Δ	4822 130 30621	1N4148
6410Δ	4822 130 30621	1N4148

7324	5322 130 60508	BC857B
7330	4822 209 91143	TDA6101Q/N3
7338	5322 130 60508	BC857B
7340	4822 209 91143	TDA6101Q/N3
7348	5322 130 60508	BC857B
7350	4822 209 91143	TDA6101Q/N3
7358	5322 130 60508	BC857B
7374	4822 130 41646	BF423
7377	4822 130 60511	BC847B
7400	4822 130 44154	BF199
7405	4822 130 42589	BF370
7414	5322 130 41888	BD140-16
7415	5322 130 41886	BD139-16
8383	4822 320 12525	Cable 3P 340mm

DC-shift panel [G]

Various

0393	4822 267 10976	5P female h
1500	3104 328 00750	DC-shift panel

2030	4822 122 31177	470pF 10% 500V
2031	4822 124 81029	100µF 20% 25V
2032	4822 124 81029	100µF 20% 25V
2033	4822 122 31177	470pF 10% 500V

3030Δ	4822 053 11689	68Ω 5% 2W
3031Δ	4822 052 10108	1Ω 5% 0,33W
3032Δ	4822 052 10108	1Ω 5% 0,33W

5030Δ	4822 157 70006	DC-shift coil

6030	4822 130 42488	BYD33D
6033	4822 130 42488	BYD33D

Small Signal Panel K[1 7]

Various

0002	4822 267 10977	IC socket 42P
0008Δ	5322 255 40958	IC socket 8P
0310	4822 267 10964	9p male v red
0311	4822 267 10978	7P male v black
0315	4822 267 10979	9P male v black
0328	4822 267 10981	11P male v black
0333	4822 267 10962	11P male v
0340	4822 267 10974	9P male v
0341	4822 267 10962	11P male v
0344	4822 267 10963	3P male v
0356	4822 267 10963	3P male v
1001	4822 242 10972	Crystal 6MHz
1020	3104 328 00510	SSP EU dig.sc. 2 scarts
1020	3104 328 00650	SSP EU 2fh 100Hz eco
1020	3104 328 03270	SSP FR dig.sc. 2 scarts
1020	3104 328 03280	SSP FR 2fh 100Hz eco
1102	4822 210 10841	UV1316/A I-2
1105	4822 242 10688	Filter OFWK9456M
1107	4822 242 72211	Filter 5,5MHz
1109	4822 242 81436	Filter OFWK3953M
1200	4822 267 10982	Socket 2xcinch
1201	4822 267 60385	Socket SCART black
1202	4822 267 60385	Socket SCART black
1305	5322 242 73686	Filter 12,00MHz
1525	4822 242 10692	Crystal 4,433 619MHz
1528	4822 242 10697	Crystal 3,579 545 MHz
1601	4822 242 10685	Crystal 12MHz
1751	4822 242 10434	Crystal 18,432MHz
1850	4822 212 11931	SECAM correction panel

2001	4822 126 13296	100nF 10% 16V
2002	4822 126 14305	100nF 10% 16V
2003	4822 126 14305	100nF 10% 16V
2005	4822 126 14305	100nF 10% 16V
2006	4822 126 14305	100nF 10% 16V
2007	4822 126 14305	100nF 10% 16V

MC-Service

12 Spare parts list

2008	4822 126 14305	100nF 10% 16V
2009	4822 126 14305	100nF 10% 16V
2010	4822 126 14305	100nF 10% 16V
2011	4822 126 14305	100nF 10% 16V
2012	4822 126 14305	100nF 10% 16V
2013	4822 126 13061	220nF 20% 25V
2014	4822 126 11669	27pF
2015	4822 126 13296	100nF 10% 16V
2016	5322 122 32659	33pF 5% 50V
2017	4822 126 14506	270pF 5% 50V
2018Δ	4822 124 41579	10µF 20% 50V
2019	4822 126 14305	100nF 10% 16V
2020	5322 122 32658	22pF 5% 50V
2021	4822 126 13296	100nF 10% 16V
2022	4822 126 13061	220nF 20% 25V
2023	4822 126 14305	100nF 10% 16V
2024	5322 126 11578	1nF 10% 50V
2025	4822 126 14305	100nF 10% 16V
2026	4822 126 14305	100nF 10% 16V
2027	4822 126 14305	100nF 10% 16V
2028	4822 126 14305	100nF 10% 16V
2029Δ	4822 124 40433	47µF 20% 25V
2030Δ	4822 124 40433	47µF 20% 25V
2031	4822 126 14305	100nF 10% 16V
2032	4822 126 14305	100nF 10% 16V
2037	4822 126 13296	100nF 10% 16V
2038	4822 126 13296	100nF 10% 16V
2039	4822 126 13883	220pF 5% 50V
2040Δ	4822 122 33177	10nF 20% 50V
2042	4822 122 33777	47pF 5% 63V
2043	4822 122 33777	47pF 5% 63V
2044	4822 122 33777	47pF 5% 63V
2045	4822 124 41584	100µF 20% 10V
2046	4822 126 13296	100nF 10% 16V
2047	4822 122 33761	22pF 5% 50V
2101Δ	4822 124 40196	220µF 20% 16V
2102	4822 126 13473	220nF 80-20% 50V
2103Δ	4822 124 41579	10µF 20% 50V
2104Δ	4822 122 33177	10nF 20% 50V
2105Δ	4822 122 33177	10nF 20% 50V
2106	4822 122 33575	220pF 5% 50V
2107	4822 126 13694	68pF 1% 63V
2108	5322 122 31873	2.7pF +-0.5 100V
2109	4822 124 41576	2.2µF 20% 50V
2110	4822 124 40242	1µF 20% 63V
2111	4822 126 13296	100nF 10% 16V
2112	4822 122 33891	3.3nF 10% 63V
2116	4822 124 41584	100µF 20% 10V
2117	4822 126 13482	470nF 80/20% 16V
2118	5322 122 33244	8.2pF 5% 50V
2119	5322 122 31863	330pF 5% 50V
2120	4822 126 13061	220nF 20% 25V
2121	4822 124 41584	100µF 20% 10V
2125Δ	4822 122 33177	10nF 20% 50V
2202	5322 122 31863	330pF 5% 50V
2203	5322 122 31863	330pF 5% 50V
2204	4822 126 14305	100nF 10% 16V
2205Δ	4822 124 41579	10µF 20% 50V
2206	5322 122 32531	100pF 5% 50V
2209	5322 122 31863	330pF 5% 50V
2210	5322 122 32531	100pF 5% 50V
2212Δ	4822 124 41579	10µF 20% 50V
2213	4822 126 14305	100nF 10% 16V
2215	5322 122 31863	330pF 5% 50V
2216	5322 122 31863	330pF 5% 50V
2217	5322 122 32531	100pF 5% 50V
2219	5322 122 31863	330pF 5% 50V
2220	5322 122 32531	100pF 5% 50V
2221	4822 126 13061	220nF 20% 25V
2222	4822 124 81286	47µF 20% 16V
2228	5322 122 31863	330pF 5% 50V
2229	5322 122 31863	330pF 5% 50V
2300Δ	4822 124 40196	220µF 20% 16V
2301Δ	4822 126 10002	100nF 20% 25V
2302Δ	4822 126 10002	100nF 20% 25V
2303	4822 124 41576	2.2µF 20% 50V
2304	4822 126 14305	100nF 10% 16V
2307	4822 122 33741	10pF 10% 50V
2308	4822 122 33741	10pF 10% 50V
2311Δ	4822 124 40196	220µF 20% 16V
2312	4822 126 14305	100nF 10% 16V
2313	4822 126 13694	68pF 1% 63V
2315	4822 122 33808	10nF 20% 50V
2321	4822 126 14509	470pF 10% 50V
2322	4822 126 14509	470pF 10% 50V
2323	5322 121 42386	100nF 5% 63V
2331	5322 126 11583	10nF 10% 50V
2340	4822 126 14509	470pF 10% 50V
2343	5322 122 32448	10pF 5% 50V
2344	4822 126 14305	100nF 10% 16V
2351	4822 126 13849	220nF 10% 16V
2403	4822 126 14305	100nF 10% 16V
2404	4822 126 14305	100nF 10% 16V
2405	4822 126 14305	100nF 10% 16V
2406	4822 126 14305	100nF 10% 16V
2407	4822 126 14305	100nF 10% 16V
2408	4822 126 14305	100nF 10% 16V
2422	4822 124 41576	2.2µF 20% 50V
2423	4822 124 41631	1.5µF 50V
2425	4822 122 33761	22pF 5% 50V
2428	4822 126 13956	68pF 5% 63V CASE
2429	4822 126 13956	68pF 5% 63V CASE
2430	5322 122 32269	6.8pF 5% 50V
2501	4822 126 14305	100nF 10% 16V
2502	4822 126 14305	100nF 10% 16V
2503	4822 126 14305	100nF 10% 16V
2504	4822 126 14305	100nF 10% 16V
2505	4822 126 14305	100nF 10% 16V
2506	4822 126 14305	100nF 10% 16V
2507	4822 126 14305	100nF 10% 16V
2508	4822 126 14305	100nF 10% 16V
2509	4822 126 14305	100nF 10% 16V
2510	4822 126 14305	100nF 10% 16V
2511	4822 126 14305	100nF 10% 16V
2512	4822 126 14305	100nF 10% 16V
2520	4822 126 14305	100nF 10% 16V
2521	4822 126 14305	100nF 10% 16V
2522	5322 126 11579	3.3nF 10% 63V
2525	4822 126 14507	18pF 5% 50V
2528	4822 122 33752	15pF 5% 50V
2532	4822 126 13836	1µF 16V
2534Δ	5322 126 10223	4.7nF 10% 63V
2536	4822 126 13296	100nF 10% 16V
2537	4822 126 13296	100nF 10% 16V
2538Δ	4822 124 40433	47µF 20% 25V
2539	4822 126 14305	100nF 10% 16V
2540Δ	4822 124 40433	47µF 20% 25V
2541Δ	5322 122 32654	22nF 10% 63V
2545	4822 126 14305	100nF 10% 16V
2565	4822 122 33753	150pF 5% 50V
2566	4822 122 33785	68pF 5% 50V
2568	4822 126 11759	100pF 50V
2601	4822 126 14305	100nF 10% 16V
2602	4822 124 81151	22µF 50V
2603	4822 126 13296	100nF 10% 16V
2604	4822 124 41584	100µF 20% 10V
2605	4822 126 13296	100nF 10% 16V
2606	4822 124 22263	220µF 20% 25V
2607	4822 126 13296	100nF 10% 16V
2608	4822 124 81151	22µF 50V
2609	4822 126 13296	100nF 10% 16V
2610	4822 124 81151	22µF 50V
2611	4822 126 14305	100nF 10% 16V
2612Δ	4822 124 41579	10µF 20% 50V
2613	4822 126 13296	100nF 10% 16V
2615	4822 126 13692	47pF 1% 63V
2616	4822 126 13692	47pF 1% 63V
2617	4822 126 14218	3.9pF 50V
2618	4822 126 11669	27pF
2619	4822 126 13882	12pF 5% 50V
2620	4822 126 14218	3.9pF 50V
2621	4822 126 11669	27pF
2623	4822 126 13882	12pF 5% 50V
2624	4822 126 14218	3.9pF 50V
2625	4822 126 11669	27pF
2626	4822 126 13882	12pF 5% 50V
2627	4822 126 11759	100pF 50V
2628	4822 126 13296	100nF 10% 16V
2629	4822 126 14225	56pF 5% 50V
2630	4822 126 14494	22nF 10% 25V
2631	4822 126 11759	100pF 50V
2632	4822 126 14507	18pF 5% 50V
2633	4822 126 14494	22nF 10% 25V
2634	4822 122 33752	15pF 5% 50V
2635	4822 122 33777	47pF 5% 63V
2636	4822 126 14508	180pF 5% 50V
2637	4822 126 14507	18pF 5% 50V
2638	4822 126 14494	22nF 10% 25V
2639	4822 122 33752	15pF 5% 50V
2640	4822 122 33777	47pF 5% 63V
2641	4822 126 14508	180pF 5% 50V
2642	4822 126 14507	18pF 5% 50V
2643	4822 126 14494	22nF 10% 25V
2644	4822 122 33752	15pF 5% 50V
2645	4822 122 33777	47pF 5% 63V
2646	4822 126 14508	180pF 5% 50V
2647	4822 126 14507	18pF 5% 50V
2648	4822 126 14507	18pF 5% 50V
2649	5322 122 32531	100pF 5% 50V
2650	5322 122 32531	100pF 5% 50V
2651	4822 124 12095	100µF 20% 16V
2652	4822 126 13296	100nF 10% 16V
2655	4822 126 14305	100nF 10% 16V
2656	4822 126 14305	100nF 10% 16V
2657Δ	4822 124 41579	10µF 20% 50V
2658	4822 126 13296	100nF 10% 16V
2659	4822 126 13296	100nF 10% 16V
2660	4822 126 13296	100nF 10% 16V
2661	4822 126 13296	100nF 10% 16V
2662	4822 126 13296	100nF 10% 16V
2663	4822 126 13296	100nF 10% 16V
2664	4822 126 13296	100nF 10% 16V
2665	4822 126 13296	100nF 10% 16V
2666	4822 126 13296	100nF 10% 16V
2667	4822 126 13296	100nF 10% 16V
2670	4822 126 13296	100nF 10% 16V
2751	4822 122 33761	22pF 5% 50V
2752	4822 126 13692	47pF 1% 63V
2753	4822 122 32927	220nF 20% 50V
2754	5322 122 32268	470pF 10% 50V
2755	5322 122 32268	470pF 10% 50V
2756	5322 122 32268	470pF 10% 50V
2757	5322 122 32268	470pF 10% 50V
2758	5322 122 32268	470pF 10% 50V
2759	5322 122 32268	470pF 10% 50V
2760	5322 122 32268	470pF 10% 50V
2761	4822 122 32927	220nF 20% 50V
2762	4822 122 32927	220nF 20% 50V
2763	5322 122 32268	470pF 10% 50V
2764	5322 122 32268	470pF 10% 50V
2765	4822 124 12095	100µF 20% 16V
2766	4822 124 12095	100µF 20% 16V
2767	5322 122 32286	3.3pF 5% 50V
2768	5322 122 32286	3.3pF 5% 50V
2769	4822 126 13482	470nF 80/20% 16V
2770	5322 126 11583	10nF 10% 50V
2771Δ	4822 122 33177	10nF 20% 50V
2772	4822 122 33761	22pF 5% 50V
2773Δ	5322 122 34123	1nF 10% 50V
2774Δ	5322 122 34123	1nF 10% 50V
2775	4822 126 13482	470nF 80/20% 16V
2776	4822 122 33761	22pF 5% 50V
2777	5322 124 41979	10µF 10% 16V
2778	5322 124 41979	10µF 10% 16V
2779Δ	4822 126 10002	100nF 20% 25V
2780	5322 124 41979	10µF 10% 16V
2781Δ	4822 126 10002	100nF 20% 25V
2782	5322 124 41979	10µF 10% 16V
2783	4822 126 13482	470nF 80/20% 16V
2784	4822 126 13482	470nF 80/20% 16V
2785Δ	5322 122 34123	1nF 10% 50V
2786Δ	5322 122 34123	1nF 10% 50V
2790	5322 122 32658	22pF 5% 50V
2791	5322 122 32658	22pF 5% 50V
2792Δ	4822 122 33177	10nF 20% 50V
2793Δ	4822 122 33177	10nF 20% 50V
2797Δ	4822 122 33177	10nF 20% 50V
2798Δ	4822 122 33177	10nF 20% 50V
2799	5322 122 32658	22pF 5% 50V
2800	5322 122 32658	22pF 5% 50V
2801	4822 122 33761	22pF 5% 50V
2802	4822 122 32927	220nF 20% 50V
2803	4822 122 32927	220nF 20% 50V
2804	4822 122 32927	220nF 20% 50V
2805	4822 122 32927	220nF 20% 50V
2808	5322 124 41979	10µF 10% 16V
2809	5322 126 10511	1nF 5% 50V
2810	4822 122 33175	2.2nF 20% 50V
2811	5322 126 10511	1nF 5% 50V
2846	5322 124 41979	10µF 10% 16V
2847	5322 124 41979	10µF 10% 16V
2848	5322 124 41979	10µF 10% 16V
2849	5322 124 41979	10µF 10% 16V
2890	4822 126 13061	220nF 20% 25V
2891Δ	4822 126 10002	100nF 20% 25V

3003	4822 117 13521	470Ω 5% 0.63W
3004	4822 117 13521	470Ω 5% 0.63W
3005	4822 117 13521	470Ω 5% 0.63W
3006	4822 051 30103	10k 5% 0.062W
3007	4822 051 30103	10k 5% 0.062W
3009	4822 117 13521	470Ω 5% 0.63W
3010	4822 051 30103	10k 5% 0.062W
3011	4822 051 30472	4k7 5% 0.062W
3013	4822 051 30102	1k 5% 0.062W
3014	4822 051 30473	47k 5% 0.062W
3015	4822 051 30473	47k 5% 0.062W
3016	4822 051 30102	1k 5% 0.062W
3017	4822 051 30102	1k 5% 0.062W
3018	4822 051 30221	220Ω 5% 0.062W
3019	4822 051 30681	680Ω 5% 0.062W
3020	4822 051 30221	220Ω 5% 0.062W
3021	4822 051 30221	220Ω 5% 0.062W
3022	4822 051 10102	1k 2% 0.25W
3023	4822 117 13521	470Ω 5% 0.63W
3024	4822 051 30471	470Ω 5% 0.062W
3027	4822 117 13521	470Ω 5% 0.63W
3028	4822 117 13521	470Ω 5% 0.63W
3029	4822 051 30471	470Ω 5% 0.062W
3030	4822 117 13522	100Ω 5% 0.63W
3031	4822 051 20331	330Ω 5% 0.1W
3032	4822 051 30471	470Ω 5% 0.062W
3033	4822 117 13523	220Ω 5% 0.63W
3034	4822 051 30103	10k 5% 0.062W
3035	4822 051 30103	10k 5% 0.062W
3036	4822 117 13524	2.2k 5% 0.63W
3039	4822 051 30103	10k 5% 0.062W
3041	4822 117 10833	10k 1% 0.1W
3042	4822 051 20474	470k 5% 0.1W
3043	4822 051 30472	4k7 5% 0.062W
3047	4822 117 13525	24k 1% 0.62W
3048	4822 117 13526	150Ω 5% 0.63W
3059	4822 051 30681	680Ω 5% 0.062W
3066	4822 117 10833	10k 1% 0.1W
3067	4822 051 30472	4k7 5% 0.062W
3068	4822 051 30103	10k 5% 0.062W
3069	4822 051 30689	68Ω 5% 0.063W
3070	4822 051 30103	10k 5% 0.062W
3073Δ	4822 051 20472	4k7 5% 0.1W
3075	4822 051 30472	4k7 5% 0.062W
3076	4822 051 30472	4k7 5% 0.062W
3077	4822 051 30102	1k 5% 0.062W
3078	4822 051 30102	1k 5% 0.062W
3102	4822 117 10833	10k 1% 0.1W
3103Δ	4822 051 20101	100Ω 5% 0.1W
3104Δ	4822 051 20101	100Ω 5% 0.1W
3106	4822 051 20479	47Ω 5% 0.1W
3110	4822 117 11449	2k2 1% 0.1W
3111	4822 117 11449	2k2 1% 0.1W
3112Δ	4822 051 20472	4k7 5% 0.1W
3114Δ	4822 051 20472	4k7 5% 0.1W
3118	4822 051 20391	390Ω 5% 0.1W
3119	4822 051 20479	47Ω 5% 0.1W
3124	4822 051 30101	100Ω 5% 0.062W
3133	4822 117 12955	2k7 1% 0.1W
3135Δ	4822 051 20472	4k7 5% 0.1W
3136	4822 117 11503	220Ω 1% 0.1W
3137	4822 051 10102	1k 2% 0.25W
3138	4822 117 11504	270Ω 1% 0.1W
3139	4822 117 11139	1k5 1% 0.1W
3140Δ	4822 051 20153	15k 5% 0.1W
3141	4822 051 30333	33k 5% 0.062W
3142	4822 051 30102	1k 5% 0.062W
3143	4822 051 30102	1k 5% 0.062W
3145	4822 051 30101	100Ω 5% 0.062W
3146	4822 051 20223	22k 5% 0.1W
3200	4822 117 13579	220k 1% 0.1W
3201	4822 117 13579	220k 1% 0.1W
3202	4822 117 10353	150Ω 1% 0.1W
3203	4822 117 10353	150Ω 1% 0.1W
3204Δ	4822 052 10688	6Ω8 5% 0.33W
3205Δ	4822 051 20471	470Ω 5% 0.1W
3206	4822 051 20689	68Ω 5% 0.1W
3207	4822 051 20561	560Ω 5% 0.1W
3209	4822 051 20759	75Ω 5% 0.1W
3210	4822 051 20759	75Ω 5% 0.1W
3211	4822 051 20759	75Ω 5% 0.1W
3213	4822 051 20759	75Ω 5% 0.1W
3215	4822 051 20759	75Ω 5% 0.1W
3216	4822 051 20822	8k2 5% 0.1W
3218	4822 051 20392	3k9 5% 0.1W
3219	4822 051 10102	1k 2% 0.25W
3220	4822 051 10102	1k 2% 0.25W
3221	4822 117 13579	220k 1% 0.1W
3222	4822 117 13579	220k 1% 0.1W
3223	4822 117 10353	150Ω 1% 0.1W
3224	4822 117 10353	150Ω 1% 0.1W
3225Δ	4822 052 10688	6Ω8 5% 0.33W
3228	4822 051 30101	100Ω 5% 0.062W
3229	4822 051 30103	10k 5% 0.062W
3230	4822 051 20561	560Ω 5% 0.1W
3232	4822 051 20689	68Ω 5% 0.1W
3235	4822 051 20759	75Ω 5% 0.1W
3236	4822 051 20759	75Ω 5% 0.1W
3240	4822 051 20759	75Ω 5% 0.1W
3241	4822 117 10353	150Ω 1% 0.1W
3242	4822 051 20822	8k2 5% 0.1W
3243	4822 117 10353	150Ω 1% 0.1W
3244	4822 051 10102	1k 2% 0.25W
3245	4822 051 20392	3k9 5% 0.1W
3246	4822 051 10102	1k 2% 0.25W
3248	4822 051 20331	330Ω 5% 0.1W
3249	4822 117 12955	2k7 1% 0.1W
3250Δ	4822 051 20101	100Ω 5% 0.1W
3252	4822 051 20339	33Ω 5% 0.1W
3253	4822 051 20391	390Ω 5% 0.1W
3257	4822 117 10353	150Ω 1% 0.1W
3258	4822 117 10353	150Ω 1% 0.1W
3259	4822 051 30273	27k 5% 0.062W
3262	4822 051 30473	47k 5% 0.062W
3263	4822 051 30221	220Ω 5% 0.062W
3266	4822 117 10833	10k 1% 0.1W
3300Δ	4822 052 10688	6Ω8 5% 0.33W
3302	4822 051 30101	100Ω 5% 0.062W
3303	4822 051 30101	100Ω 5% 0.062W
3304	4822 051 30101	100Ω 5% 0.062W
3307	4822 051 30102	1k 5% 0.062W
3308	4822 051 30102	1k 5% 0.062W
3309	4822 051 30104	100k 5% 0.062W
3310Δ	4822 051 20332	3k3 5% 0.1W
3311	4822 051 30102	1k 5% 0.062W
3315	4822 051 20182	1k8 5% 0.1W
3316	4822 051 10102	1k 2% 0.25W
3317	4822 051 30102	1k 5% 0.062W
3318	4822 051 30102	1k 5% 0.062W
3320	4822 051 30102	1k 5% 0.062W
3321	4822 051 30102	1k 5% 0.062W
3322	4822 051 30102	1k 5% 0.062W
3323	4822 051 20393	39k 5% 0.1W
3325	4822 051 30102	1k 5% 0.062W
3326	4822 051 30221	220Ω 5% 0.062W
3330	4822 051 30684	680k 5% 0.062W
3331	4822 051 30473	47k 5% 0.062W
3332	4822 051 30183	18k 5% 0.062W
3340	4822 051 30123	12k 5% 0.062W
3341	4822 051 10102	1k 2% 0.25W
3342	4822 051 30103	10k 5% 0.062W
3343	4822 051 20104	100k 5% 0.1W
3344	4822 051 30103	10k 5% 0.062W
3350	4822 051 30474	470k 5% 0.062W
3351	4822 051 30224	220k 5% 0.062W
3352	4822 051 30332	3k3 5% 0.062W
3353	4822 051 30182	1k8 5% 0.062W
3369	4822 051 30103	10k 5% 0.062W
3370	4822 051 30103	10k 5% 0.062W
3400	4822 117 11454	820Ω 1% 0.1W
3401	4822 117 11454	820Ω 1% 0.1W
3402	4822 117 11454	820Ω 1% 0.1W
3404	4822 051 20479	47Ω 5% 0.1W
3405	4822 051 20479	47Ω 5% 0.1W
3406	4822 051 20479	47Ω 5% 0.1W
3407	4822 051 20681	680Ω 5% 0.1W
3408	4822 051 20681	680Ω 5% 0.1W

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3409	4822 051 20681	680Ω 5% 0.1W
3420	4822 051 30473	47k 5% 0.062W
3422	4822 117 11449	2k2 1% 0.1W
3423Δ	4822 051 20108	1Ω 5% 0.1W
3425	4822 051 30474	470k 5% 0.062W
3426	4822 051 30333	33k 5% 0.062W
3427	4822 051 30224	220k 5% 0.062W
3428	4822 051 30222	2k2 5% 0.062W
3429	4822 117 12968	820Ω 5% 0.62W
3430	4822 051 30181	180Ω 5% 0.062W
3439	4822 117 10833	10k 1% 0.1W
3440	4822 051 20333	33k 5% 0.1W
3441	4822 051 20223	22k 5% 0.1W
3521	4822 051 30104	100k 5% 0.062W
3529	4822 117 13522	100Ω 5% 0.63W
3530	4822 051 30101	100Ω 5% 0.062W
3531	4822 051 30101	100Ω 5% 0.062W
3532Δ	4822 051 20153	15k 5% 0.1W
3538Δ	4822 052 10478	4Ω7 5% 0.33W
3545	4822 051 30471	470Ω 5% 0.062W
3546	4822 051 30471	470Ω 5% 0.062W
3565	4822 051 30101	100Ω 5% 0.062W
3566	4822 051 30101	100Ω 5% 0.062W
3567Δ	4822 051 20101	100Ω 5% 0.1W
3568Δ	4822 051 20471	470Ω 5% 0.1W
3569	4822 051 30479	47Ω 5% 0.062W
3570	4822 117 13522	100Ω 5% 0.63W
3573Δ	4822 051 20109	10Ω 5% 0.1W
3574Δ	4822 051 20008	0Ω jumper 0805
3602	4822 117 12139	22Ω 5% 0.062W
3603	4822 051 30101	100Ω 5% 0.062W
3605	4822 051 30101	100Ω 5% 0.062W
3606	4822 051 30109	10Ω 5% 0.062W
3607	4822 051 30392	3k9 5% 0.063W
3608	4822 051 30272	2k7 5% 0.062W
3609	4822 117 13527	1Ω 5% 0.62W
3610	4822 051 30391	390Ω 5% 0.062W
3611	4822 051 30102	1k 5% 0.062W
3612	4822 051 30391	390Ω 5% 0.062W
3613	4822 051 30391	390Ω 5% 0.062W
3614	4822 051 30479	47Ω 5% 0.062W
3615	4822 051 30471	470Ω 5% 0.062W
3616	4822 051 30472	4k7 5% 0.062W
3617	4822 051 30472	4k7 5% 0.062W
3618	4822 051 30221	220Ω 5% 0.062W
3619	4822 051 30472	4k7 5% 0.062W
3620	4822 051 30472	4k7 5% 0.062W
3621	4822 051 30101	100Ω 5% 0.062W
3623	4822 051 30101	100Ω 5% 0.062W
3625	4822 051 30105	1M 5% 0.062W
3626	4822 051 30101	100Ω 5% 0.062W
3628	4822 051 30101	100Ω 5% 0.062W
3629	4822 051 30332	3k3 5% 0.062W
3630Δ	4822 051 20101	100Ω 5% 0.1W
3631Δ	4822 051 20101	100Ω 5% 0.1W
3632	4822 051 10102	1k 2% 0.25W
3633	4822 051 30101	100Ω 5% 0.062W
3634	4822 051 30332	3k3 5% 0.062W
3635	4822 051 20681	680Ω 5% 0.1W
3636	4822 051 20681	680Ω 5% 0.1W
3637	4822 051 20681	680Ω 5% 0.1W
3639	4822 051 30101	100Ω 5% 0.062W
3640	4822 117 13527	1Ω 5% 0.62W
3641	4822 051 30102	1k 5% 0.062W
3644	4822 051 30102	1k 5% 0.062W
3645	4822 051 30102	1k 5% 0.062W
3646Δ	4822 051 20472	4k7 5% 0.1W
3647	4822 051 30689	68Ω 5% 0.063W
3648	4822 051 30689	68Ω 5% 0.063W
3649	4822 051 30689	68Ω 5% 0.063W
3650	4822 051 30121	120Ω 5% 0.062W
3651	4822 051 30121	120Ω 5% 0.062W
3652	4822 051 30121	120Ω 5% 0.062W
3653	4822 051 30689	68Ω 5% 0.063W
3654	4822 051 30689	68Ω 5% 0.063W
3655	4822 051 30101	100Ω 5% 0.062W
3657	4822 051 30101	100Ω 5% 0.062W
3659	4822 051 30101	100Ω 5% 0.062W
3751	4822 051 30223	22k 5% 0.062W
3752	4822 051 30223	22k 5% 0.062W
3753	4822 051 30682	6k8 5% 0.062W
3754	4822 051 30682	6k8 5% 0.062W
3755	4822 051 30101	100Ω 5% 0.062W
3756	4822 051 30101	100Ω 5% 0.062W
3758	4822 051 30683	68k 5% 0.062W
3760	4822 051 30683	68k 5% 0.062W
3761	4822 051 30682	6k8 5% 0.062W
3765	4822 051 20683	68k 5% 0.1W
3766	4822 117 10833	10k 1% 0.1W
3767	4822 051 20683	68k 5% 0.1W
3768	4822 117 10833	10k 1% 0.1W
3769Δ	4822 051 20332	3k3 5% 0.1W
3770Δ	4822 051 20332	3k3 5% 0.1W
3771	4822 117 11507	6k8 1% 0.1W
3772	4822 117 11507	6k8 1% 0.1W
3773Δ	4822 051 20472	4k7 5% 0.1W
3776	4822 051 20562	5k6 5% 0.1W
3777	4822 117 10833	10k 1% 0.1W
3778	4822 051 20562	5k6 5% 0.1W
3779	4822 117 10833	10k 1% 0.1W
3780	4822 051 30682	6k8 5% 0.062W
3781	4822 051 30561	560Ω 5% 0.062W
3783Δ	4822 051 20101	100Ω 5% 0.1W
3784	4822 051 30682	6k8 5% 0.062W
3785	4822 051 30682	6k8 5% 0.062W
3786	4822 051 30223	22k 5% 0.062W
3787	4822 051 30223	22k 5% 0.062W
3788	4822 051 30682	6k8 5% 0.062W
3789	4822 051 30682	6k8 5% 0.062W
3790	4822 051 30223	22k 5% 0.062W
3791	4822 051 30223	22k 5% 0.062W
3796Δ	4822 051 20121	120Ω 5% 0.1W
3797Δ	4822 051 20121	120Ω 5% 0.1W
3798	4822 051 20223	22k 5% 0.1W
3799	4822 051 30223	22k 5% 0.062W
3830Δ	4822 051 20121	120Ω 5% 0.1W
3831Δ	4822 051 20121	120Ω 5% 0.1W
3832	4822 051 10102	1k 2% 0.25W
3833	4822 051 30103	10k 5% 0.062W
3840	4822 051 30103	10k 5% 0.062W
3844	4822 051 30473	47k 5% 0.062W
3845	4822 051 30473	47k 5% 0.062W
3846	4822 051 30473	47k 5% 0.062W
3847	4822 051 30473	47k 5% 0.062W
3890Δ	4822 051 20008	0Ω jumper 0805
3892Δ	4822 051 20008	0Ω jumper 0805
3895	4822 051 30103	10k 5% 0.062W
3897	4822 051 30472	4k7 5% 0.062W
3898	4822 051 30101	100Ω 5% 0.062W
4xxx	4822 051 10008	0Ω 5% 0.25W 1206
4xxx	4822 051 20008	0Ω 5% 0.25W 0805

5001	4822 157 71304	1µH
5002	4822 157 11775	6.8µH 5%
5101	4822 157 11775	6.8µH 5%
5102	4822 157 71303	0,39µH 10%
5103	4822 157 11776	Coil var. 40,4MHz
5106	4822 157 10977	4.7µH 10%
5108	4822 157 11534	Coil var. 78MHz
5301	4822 157 11777	6.8µH 10%
5302	4822 157 11777	6.8µH 10%
5305	4822 157 11778	5.6µH 10%
5306	4822 157 11778	5.6µH 10%
5307	4822 157 11778	5.6µH 10%
5501	4822 157 11775	6.8µH 5%
5502	4822 157 11775	6.8µH 5%
5540	4822 157 71304	1µH 10%
5601	4822 157 11775	6.8µH 5%
5602	4822 157 11779	Bead 100MHz 30Ω
5603	4822 157 11775	6.8µH 5%
5604	4822 157 11775	6.8µH 5%
5605	4822 157 11779	Bead 100MHz 30Ω
5606	4822 157 11775	6.8µH 5%
5608	4822 157 11778	5.6µH 10%
5609	4822 157 11778	5.6µH 10%
5610	4822 157 11778	5.6µH 10%
5611	4822 157 11781	Bead 100MHz 600Ω
5613	4822 157 11781	Bead 100MHz 600Ω
5615	4822 157 11778	5.6µH 10%
5616	4822 157 11778	5.6µH 10%
5617	4822 157 11778	5.6µH 10%
5620	4822 157 11775	6.8µH 5%
5621	4822 157 11782	100µH 10%
5751	4822 157 11775	6.8µH 5%
5752	4822 157 11775	6.8µH 5%
5753	4822 157 11775	6.8µH 5%

6001	4822 130 11422	PLVA2650A
6002	4822 130 11422	PLVA2650A
6003	4822 130 11422	PLVA2650A
6004	4822 130 11422	PLVA2650A
6006	4822 130 11422	PLVA2650A
6008	4822 130 11422	PLVA2650A
6009	4822 130 11422	PLVA2650A
6012	4822 130 11422	PLVA2650A
6013	4822 130 11422	PLVA2650A
6017	4822 130 11422	PLVA2650A
6019	4822 130 11422	PLVA2650A
6021	4822 130 11422	PLVA2650A
6023	4822 130 11422	PLVA2650A
6025	4822 130 11423	PLVA2656A
6026	4822 130 11423	PLVA2656A
6037	4822 130 11366	BZX284-C3V9
6101	4822 130 11027	BZX284-C33
6103	4822 130 10414	BA792
6104	4822 130 10414	BA792
6106	4822 130 11397	BAS316
6107	4822 130 11397	BAS316
6200	4822 130 11413	PDZ10B
6201	4822 130 11413	PDZ10B
6202	4822 130 11413	PDZ10B
6203	4822 130 11413	PDZ10B
6204	4822 130 11416	PDZ6.8B
6205	4822 130 11413	PDZ10B
6206	4822 130 11413	PDZ10B
6207	4822 130 11416	PDZ6.8B
6208	4822 130 11413	PDZ10B
6209	4822 130 11413	PDZ10B
6210	4822 130 11416	PDZ6.8B
6211	4822 130 11416	PDZ6.8B
6212	4822 130 11416	PDZ6.8B
6213	4822 130 11416	PDZ6.8B
6214	4822 130 11413	PDZ10B
6215	4822 130 11413	PDZ10B
6216	4822 130 11413	PDZ10B
6217	4822 130 11413	PDZ10B
6218	4822 130 11416	PDZ6.8B
6219	4822 130 11416	PDZ6.8B
6220	4822 130 11413	PDZ10B
6221	4822 130 11413	PDZ10B
6222	4822 130 11416	PDZ6.8B
6223	4822 130 11413	PDZ10B
6224	4822 130 11413	PDZ10B
6225	4822 130 11416	PDZ6.8B
6226	4822 130 11416	PDZ6.8B
6227	4822 130 11416	PDZ6.8B
6228	4822 130 11416	PDZ6.8B
6234	4822 130 11413	PDZ10B
6235	4822 130 11413	PDZ10B
6236	4822 130 11413	PDZ10B
6237	4822 130 11413	PDZ10B
6238	4822 130 10654	BAT254
6250	4822 130 10654	BAT254
6340	4822 130 11397	BAS316
6341	4822 130 11424	BZX284-C39
6344	4822 130 11397	BAS316
6350	4822 130 11414	BZX284-C27
6420	4822 130 11416	PDZ6.8B
6422	4822 130 11397	BAS316
6424	4822 130 11397	BAS316
6429	4822 130 10648	BZX284-C5V6
6430	4822 130 11397	BAS316
6431	4822 130 11397	BAS316
6751	4822 130 11413	PDZ10B
6752	4822 130 11413	PDZ10B
6753	4822 130 11413	PDZ10B
6754	4822 130 11413	PDZ10B
6755	4822 130 11413	PDZ10B
6756	4822 130 11413	PDZ10B
6757	4822 130 11397	BAS316

7001	4822 209 16974	MSM54V16258B-45JS
7002	4822 900 11275	MG21E11.0_01561
7003	4822 209 16976	SAA5800H/11
7004	4822 130 60511	BC847B
7005	5322 130 60508	BC857B
7006	5322 130 60508	BC857B
7007	4822 130 60511	BC847B
7008	4822 209 16977	M24C32-WBN6
7009	4822 209 16978	LF33CV
7010Δ	4822 209 73852	PMBT2369
7011	4822 130 11155	PDTC114ET
7012	5322 130 60508	BC857B
7016	4822 130 60511	BC847B
7017Δ	4822 209 73852	PMBT2369
7018Δ	4822 209 73852	PMBT2369
7103	4822 130 60511	BC847B
7104	4822 130 60511	BC847B
7107	5322 130 60508	BC857B
7111	4822 130 60511	BC847B
7200	4822 130 40959	BC547B
7201	4822 130 40959	BC547B
7203	4822 130 44568	BC557B
7204	4822 130 60511	BC847B
7205	4822 130 60511	BC847B
7216	4822 130 60511	BC847B
7300	4822 209 16979	TDA9330H/N1
7341	5322 130 60508	BC857B
7351	5322 130 60508	BC857B
7418	5322 130 60508	BC857B
7419	5322 130 60508	BC857B
7420	5322 130 60508	BC857B
7424	5322 130 60508	BC857B
7438	4822 130 10255	MMUN2213
7501	4822 209 16981	TDA9320H/N1
7502	4822 130 60511	BC847B
7561	4822 130 60511	BC847B
7601	5322 130 60508	BC857B
7602	4822 130 60511	BC847B
7603	5322 130 60508	BC857B
7604Δ	4822 209 73852	PMBT2369
7605Δ	4822 209 73852	PMBT2369
7608	4822 209 90034	SAA4990H/V0
7609	4822 209 16983	SAA4978H/V1
7610	5322 130 60508	BC857B
7611	5322 130 60508	BC857B
7612	5322 130 60508	BC857B
7613	4822 209 15882	MC33269D
7616	4822 900 11276	FBX software V_01450
7751	4822 209 16803	MSP3410D-PS-B4
7752	5322 209 11102	HEF4052BT
7756	4822 209 30095	LM833D
7757	4822 209 31378	NJM4556MB
7758	4822 209 30095	LM833D
7774	4822 130 60511	BC847B

Side I/O panel [O]

Various

0326	4822 267 10975	Socket 3xCINCH
0327	4822 267 31014	Socket headph. 3,5mm
0328	4822 265 11337	Socket SVHS
0333	4822 267 10962	11P male v
0344	4822 267 10963	3P male v
1047	3104 328 00420	Side I/O panel

2804	5322 122 32531	100pF 5% 50V
2805	5322 122 32531	100pF 5% 50V
2807	4822 126 13061	220nF 20% 25V
2810	4822 126 12105	33nF 5% 63V
2811	4822 124 81029	100µF 20% 25V
2813	4822 124 41576	2,2µF 20% 50V
2832Δ	4822 122 33177	10nF 20% 50V
2834Δ	4822 122 33177	10nF 20% 50V

3801	4822 116 52201	75Ω 5% 0,5W
3802	4822 116 52201	75Ω 5% 0,5W
3803	4822 050 11002	1k 1% 0,4W
3804	4822 050 11002	1k 1% 0,4W
3805	4822 116 52271	33k 5% 0,5W
3806	4822 116 52271	33k 5% 0,5W
3808Δ	4822 051 20008	0Ω jumper . (0805)
3809Δ	4822 051 20008	0Ω jumper . (0805)
3810	4822 051 20684	680k 5% 0,1W
3811	4822 051 20393	39k 5% 0,1W
3812	4822 051 20154	150k 5% 0,1W
3813	4822 051 20392	3k9 5% 0,1W
3814	4822 117 11449	2k2 1% 0,1W
3816Δ	4822 051 20008	0Ω jumper . (0805)
3826	4822 116 52206	120Ω 5% 0,5W
3827	4822 116 52206	120Ω 5% 0,5W
3828	4822 116 52206	120Ω 5% 0,5W
3829	4822 116 52206	120Ω 5% 0,5W
3830	4822 116 83864	10k 5% 0,5W
3842	4822 116 83864	10k 5% 0,5W
3845	4822 116 52283	4k7 5% 0,5W
3846	4822 116 83864	10k 5% 0,5W
3847	4822 117 10833	10k 1% 0,1W
3848	4822 051 20562	5k6 5% 0,1W 0805
3849Δ	4822 051 20332	3k3 5% 0,1W
3999	4822 117 10353	150Ω 1% 0,1W

5800	4822 157 11228	100µH 5%

6801	4822 130 10852	BZX284-C6V8
6802	4822 130 10852	BZX284-C6V8
6803	4822 130 10794	BZX284-C10
6804	4822 130 10794	BZX284-C10
6805	4822 130 10794	BZX284-C10
6806	4822 130 10794	BZX284-C10
6807	4822 130 10852	BZX284-C6V8
6808	4822 130 10852	BZX284-C6V8

7811	5322 130 60508	BC857B
7812	5322 130 60508	BC857B
7813	4822 130 60511	BC847B

Top control panel [P]

Various

0345	4822 267 10748	3P male h
1049	3104 328 00160	Top control panel
1701	4822 276 13775	Tact switch
1702	4822 276 13775	Tact switch
1703	4822 276 13775	Tact switch
1704	4822 276 13775	Tact switch
1705	4822 276 13775	Tact switch

3701	4822 051 20391	390Ω 5% 0,1W
3702	4822 117 13528	200Ω 1% 0,125W
3703	4822 117 10845	620Ω 1% 0.1W
3704	4822 117 11534	1k1 1% 0,1W
3705	4822 117 11951	2k 1% 0,1W

Philips Consumer Service GmbH
Colonia-Allee 11, 51067 Köln
Tel.: 0221/96960-0, Fax: 0221/96960-809

PHILIPS

Art. Code: 05
Sachgebiet: CTV

Memo: DE10BEA

SI

Wichtig für die Werkstatt!

Nummer: 4822 830 05022

Datum: 17.03.1999

Service Information

Betrifft: MG 2.1

Verteiler: S1,F1

Folgende Kleinsignalplatinen (SSP) für das MG 2.1 Chassis sind als Austausch-Platine über das Ersatzteilwesen verfügbar:

3104 328 00510	3104 328 03280
3104 328 00520	3104 328 03600
3104 328 00650	3104 328 03850
3104 328 03270	3104 328 03860

Diese Auflistung enthält alle lieferbaren SSP's ; daher sind auch Exportvarianten aufgeführt.
Die 31..- Bestellnummer entnehmen Sie bitte einem Aufkleber auf der SSP der sich neben der Steckfassung Pos.: 0315 befindet.
Für die Ersatzteilbestellung geben Sie bitte die abgelesene Nummer an, z.B. 3104 317 01531 ; diese Nummer wird dann im Euroservice automatisch in die z.Zt. aktuelle Version 3104 317 00510 recodiert.

Bitte beachten Sie beim Einsenden der Kleinsignalplatine **vorher die Software (EPROM ; Pos.Nr.:7002) zu entnehmen** und in die neugelieferte SSP einzusetzen. Bitte überprüfen Sie anhand des Product-Surveys ob die entnommene Software weiterhin verwendet werden kann oder durch einen aktuellen Typ ersetzt werden muß

Das Speicher-IC (NVM ; Pos.Nr.:7008) muß beim Einsenden auf der Kleinsignalplatte verbleiben; die neue SSP wird mit bestücktem Speicher-IC geliefert.

Wenn möglich sollten vorher die Speicherwerte für die allgemeinen Einstellungen (Menüpunkt:General) und die Bildgeometrie (Menüpunkt/e:Normal + bei 16:9-Geräten Super-Wide-Geometry) ausgelesen werden.

Form 80 048

Nachdruck nicht gestattet! Änderungen vorbehalten.

Philips Consumer Service GmbH
Colonia-Allee 11, 51067 Köln
Tel.: 0221/96960-0, Fax: 0221/96960-809

PHILIPS

Art. Code: 05
Sachgebiet: CTV

Memo: DE10BEA

SI

Wichtig für die Werkstatt!

Nummer: 4822 830 05019

Datum: 03.03.1999

Service Information

Betrifft: MG 2.1E
Austausch EEPROM

Verteiler: S1,F1

Bei einem erforderlichen Austausch des Speicher-IC´s (EEPROM;Pos.Nr.: IC7008) auf der Klein-Signal-Platte /SSP sollte wie folgt vorgegangen werden:

- Die Werte für AFC und AGC aus dem alten Speicher-IC auslesen und notieren.
  Diese beiden Menüpunkte sind nach einem Aufruf des Service-Alignment-Menüs unter Alignments/General zu finden.
  Falls möglich sollten auch die Werte der Geometrieeinstellungen ausgelesen werden.

- Ersetzen sie das Speicher IC

- Stellen Sie im Service-Alignment-Menü die notierten Werte für AFC und AGC wieder ein.

Ein Fehlabgleich des AFC-Kreises macht sich in einem überscharfen Bild bemerkbar oder kann zu einem ständigen durchfahren der AFC-Schleife führen.

Falls das alte Speicher-IC gelöscht oder defekt sein sollte können keine Werte ausgelesen werden.
In diesen Fall erfogt die AFC-und AGC-Einstellung wie in Service-Manual / Kapitel 8.4 vorgesehen.

IRIS Symptom code: 1178

Form 80 048

Nachdruck nicht gestattet! Änderungen vorbehalten.

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Colonia-Allee 11, 51067 Köln
Tel.: 0221/96960-0, Fax: 0221/96960-809

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Art. Code: 05
Sachgebiet: CTV

Memo: DE10BEA

SI

Wichtig für die Werkstatt!

Nummer: 4822 830 05021

Datum: 17.03.1999

Service Information

Betrifft: MD 2.1x ;MD 2.2x
MG 2.1

Verteiler: S1,F1

Kritische Kunden reklamieren unter Umständen bei High-End-Geräten
Mit 25/29" - 4:3 oder 28" – 16:9 Bildröhren folgende Erscheinungen:

- Knistern am Konus der Bildröhre, besonders bei starken hell/dunkel-Sprüngen des Bildinhaltes
- Leise summende oder brummende Geräusche aus der Front der Bildröhre, abhängig vom Bildinhalt (nicht zu verwechseln mit brummenden Ablenkeinheiten)

In beiden Fällen ist wie folgt vorzugehen:

→ prüfen Sie,ob bereits ein Bleeder nachgerüstet wurde (siehe dazu SI: 4822 830 05017 vom 15.04.1998)
→ bei weiteren Beanstandungen bringt nachträgliches auftragen des sogenannten ACC-Belages unterhalb der Ablenkeinheit Abhilfe.

Die Bestellnummer für den flüssigen ACC-Belag lautet: 4822 390 10166

Eine detaillierte Anweisung zum aufbringen von ACC liegt im Anhang bei

IRIS-Codes: 2141 bzw. 2145

Form 80 048

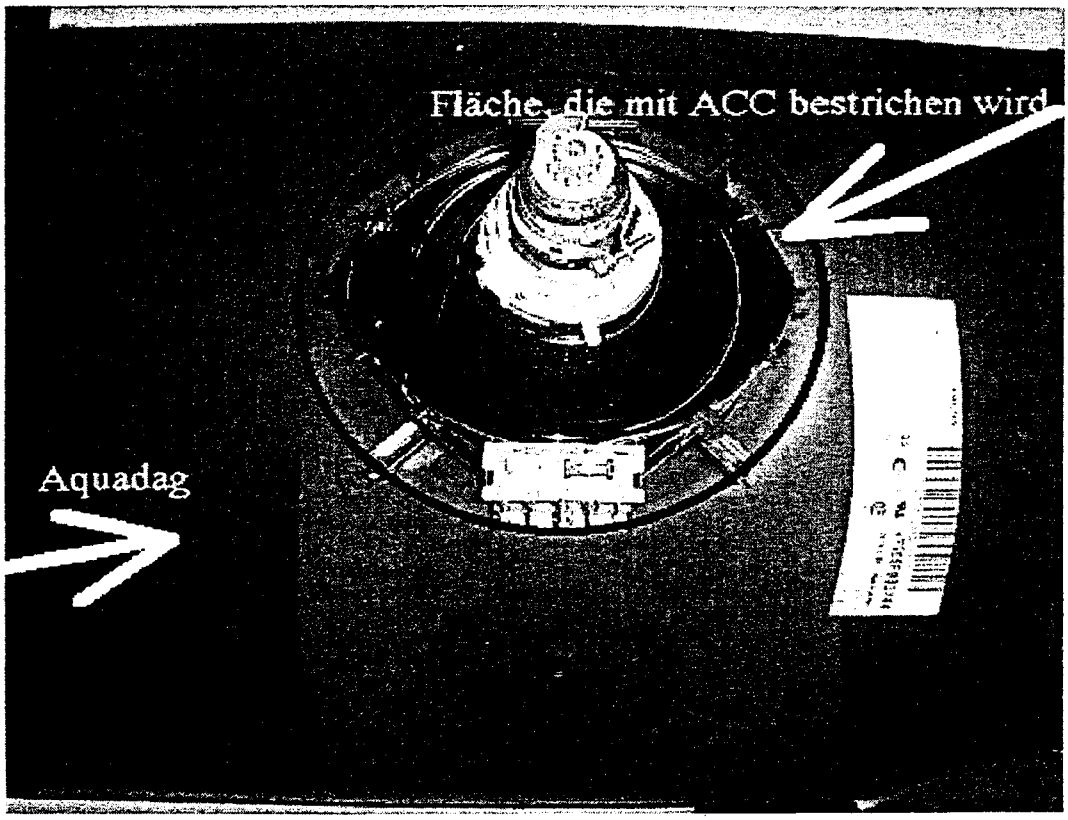
Nachdruck nicht gestattet! Änderungen vorbehalten.

PHILIPS Consumer Service GmbH **2.10.98**
Trade Support CTV/SAT

Reparaturmethode bei leisem Brummen an der Front und Knistern am Konus von Bildröhren.

Bitte lesen Sie zunächst die gesamte Anleitung, bevor Sie beginnen

Diese Methode darf nur von entsprechend geschulten Fernseh-Servicetechnikern ausgeführt werden.



Röhre mit ACC (Anti Crackling Coating=Anti Knister Belag) versehen (nur wenn nicht schon ab Fabrik vorhanden).

Prüfen Sie die Geometrieeigenschaften wie Rasterrotation, Konvergenz und Farbreinheit des Gerätes, so daß Sie einen Eindruck über die jetzige Einstellung des Gerätes gewinnen, die Sie später wieder erreichen sollten. Verschaffen Sie sich auch einen guten Überblick über das „Brummniveau" bzw. über das Knisterverhalten beim Ein-Ausschalten sowie bei Lastwechseln von hohen Helligkeiten zu dunklem Schirm.

Gerät spannungsfrei schalten, öffnen.

Lösen Sie die Anschlüsse der Ablenkeinheit, ziehen Sie den Bildröhrensockel ab, lösen Sie die Halsklemmenschraube. Schneiden Sie mit einer Rasierklinge das Silikon durch, welches die Ablenkeinheit zusätzlich auf der Röhre fixiert, und zwar so, daß jeweils ein Teil Silikon an der Röhre und an der Ablenkeinheit zurückbleibt. So ist zum Schluß eine einfachere mechanische Justage möglich. Markieren Sie in Richtung Anode (Norden) mit einem Filzstift die oberhalb der Ablenkeinheit die maximale Fläche, die bestrichen werden darf, ca. 20cm im Durchmesser.
Legen sie das Gerät auf den Bildröhrenschirm (weiche Unterlage !).

Schütteln Sie den ACC Behälter kräftig durch, damit die Sedimente wieder eingemischt werden.
Geben Sie, auf eine im Baumarkt erhältliche kleine Farbrolle, ACC aus dem Behälter auf die Rolle. Beginnen Sie um den Bildröhrenhals ACC auf die unbedeckte Glasfläche aufzutragen. Vermeiden Sie noch, den bestehenden Aquadagbelag zu berühren. Bestreichen Sie den Hals soweit, daß er ca. 3 cm über der Halsansetzstelle (Verbindung von Hals zu Konus) bedeckt ist. Zuletzt stellen Sie eine leitende Verbindung zwischen ACC und Aquadag her, durch überrollen des Randes vom Aquadagbelag. Da Aquadag niederohmig ist, ACC hochohmig, vermeiden Sie Aquadag anzulösen und in ACC einzubringen. Diese Untermengung kann später Hochspannungsprobleme hervorrufen. Die Hochspannung benutzt die „Aquadaginseln" im ACC Belag unterhalb der Ablenkeinheit, um zu ihr überzuschlagen.

Trocknen Sie die Fläche mit einem Haartrockner.

Setzen Sie die Ablenkeinheit wieder auf, fixieren Sie sie im bestehenden Silikon, ziehen Sie die Halsklemmenschraube leicht fest.

Setzen Sie das Gerät wieder in die Normalposition und schließen alle Anschlüsse wieder an. Das Gerät kann jetzt eingeschaltet werden. Stellen Sie ein Gittermuster-testbild ein und positionieren die Rasterrotation, indem Sie die Halsklemmenschraube lösen und leicht durch Drehung der Ablenkeinheit nach links oder rechts nachstellen. Ziehen Sie die Halsklemmenschraube mit einem max. Drehmoment von 100Ncm wieder fest. **Achtung:** Sie können bei zu hohen Drehmomenten Halsbruch verursachen.

Sie sollten jetzt ein deutlich vermindertes Niveau des Brummens der Röhre sowie des Knistern bei Lastwechseln wahrnehmen können.

Schließen Sie das Gerät.

Colour Television

Chassis

MG2.1E

AA 99.03

Service
Service
Service

Service Information

Parts list belonging to Service Information
MG2.1E AA 99-01

MC-Service

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PHILIPS

Spare parts list

SSP

Various

0002	4822 267 10977	IC SOCKET 42P
0008	5322 255 40958	8-DIP-S-LC
0310	4822 267 10964	CONN. 9P
0311	4822 267 10978	CONN. 7P
0315	4822 267 10979	CONN. 9P
0328	4822 267 10981	CONN. 11P
0333	4822 267 10962	CONN. 11P
0340	4822 267 10974	CONN. 9P
0341	4822 267 10962	CONN. 11P
0344	4822 267 10963	CONN. 3P
0356	4822 267 10963	CONN. 3P
1001	4822 242 10972	6MHz
1102	4822 210 10841	VHF/UHF UV1316/A I-2
1105	4822 242 10688	OFWK9456M
1107	4822 242 72211	TPS5,5MW
1109	4822 242 81436	OFWK3953M
1200	4822 267 11033	CINCH 3P
1201	4822 267 10771	42P FEMALE
1202	4822 267 60385	21P
1305	5322 242 73686	CST12,00MTW-TF01
1525	4822 242 10695	4 433 619 MHz
1528	4822 242 10697	3 579 545 MHz
1601	4822 242 10685	L1101-96019-0E1 (12MHz)
1751	4822 242 10434	L1101-95263-0E1(18,432MHz)

⊣⊢

2001	4822 126 13196	100nF 10% 25V
2002	4822 126 14305	100nF 10% 16V 0603
2003	4822 126 14305	100nF 10% 16V 0603
2005	4822 126 14305	100nF 10% 16V 0603
2006	4822 126 14305	100nF 10% 16V 0603
2007	4822 126 14305	100nF 10% 16V 0603
2008	4822 126 14305	100nF 10% 16V 0603
2009	4822 126 14305	100nF 10% 16V 0603
2010	4822 126 14305	100nF 10% 16V 0603
2011	4822 126 14305	100nF 10% 16V 0603
2012	4822 126 14305	100nF 10% 16V 0603
2013	4822 126 13061	220nF 20% 25V
2014	4822 126 11669	27pF
2015	4822 126 13196	100nF 10% 25V
2016	5322 122 32659	33pF 5% 50V
2018	4822 124 41579	10µF 20% 50V
2019	4822 126 14305	100nF 10% 16V 0603
2020	5322 122 32658	22pF 5% 50V
2021	4822 126 13196	100nF 10% 25V
2022	4822 126 13061	220nF 20% 25V
2023	4822 126 14305	100nF 10% 16V 0603
2024	5322 126 11578	1nF 10% 50V 0603
2025	4822 126 14305	100nF 10% 16V 0603
2026	4822 126 14305	100nF 10% 16V 0603
2027	4822 126 14305	100nF 10% 16V 0603
2028	4822 126 14305	100nF 10% 16V 0603
2029	4822 124 40433	47µF 20% 25V
2030	4822 124 40433	47µF 20% 25V
2031	4822 126 14305	100nF 10% 16V 0603
2032	4822 126 14305	100nF 10% 16V 0603
2035	4822 126 13196	100nF 10% 25V
2037	4822 126 13196	100nF 10% 25V
2038	4822 126 13196	100nF 10% 25V
2039	4822 126 13883	220pF 5% 50V
2040	4822 122 33177	10nF 20% 50V
2042	4822 122 33777	47pF 5% 63V
2043	4822 122 33777	47pF 5% 63V
2044	4822 122 33777	47pF 5% 63V
2045	4822 124 41584	100µF 20% 10V
2046	4822 126 13196	100nF 10% 25V
2047	4822 122 33761	22pF 5% 50V
2101	4822 124 40196	220µF 20% 16V
2102	4822 126 13473	220nF 80-20% 50V
2103	4822 124 41579	10µF 20% 50V
2104	4822 122 33177	10nF 20% 50V
2105	4822 122 33177	10nF 20% 50V
2106	4822 122 33575	220pF 5% 63V CASE
2107	4822 126 13694	68pF 1% 63V
2108	5322 122 31873	2.7pF +-0.5 100V
2109	4822 124 41576	2.2µF 20% 50V
2110	4822 124 40242	1µF 20% 63V
2111	4822 126 13196	100nF 10% 25V
2112	4822 122 33891	3.3nF 10% 63V
2116	4822 124 41584	100µF 20% 10V
2117	4822 126 13482	470nF 80/20% 16V
2118	5322 122 33244	8.2pF 5% 50V
2119	5322 122 31863	63V 330pF PM5
2120	4822 126 13061	220nF 20% 25V
2121	4822 124 41584	100µF 20% 10V
2125	4822 122 33177	10nF 20% 50V
2202	5322 122 31863	63V 330pF PM5
2203	5322 122 31863	63V 330pF PM5
2204	4822 126 14305	100nF 10% 16V 0603
2205	4822 124 41579	10µF 20% 50V
2206	5322 122 32531	100pF 5% 50V
2209	5322 122 31863	63V 330pF PM5
2210	5322 122 32531	100pF 5% 50V
2212	4822 124 41579	10µF 20% 50V
2213	4822 126 14305	100nF 10% 16V 0603
2215	5322 122 31863	63V 330pF PM5
2216	5322 122 31863	63V 330pF PM5
2217	5322 122 32531	100pF 5% 50V
2219	5322 122 31863	63V 330pF PM5
2220	5322 122 32531	100pF 5% 50V
2221	4822 126 13061	220nF 20% 25V
2222	4822 124 40433	47µF 20% 25V
2224	5322 122 32531	100pF 5% 50V
2226	5322 122 32531	100pF 5% 50V
2228	5322 122 31863	63V 330pF PM5
2229	5322 122 31863	63V 330pF PM5
2230	4822 122 33891	3.3nF 10% 63V
2300	4822 124 40196	220µF 20% 16V
2301	4822 126 10002	100nF 20% 25V
2302	4822 126 10002	100nF 20% 25V
2303	4822 124 41576	2.2µF 20% 50V
2304	4822 126 14305	100nF 10% 16V 0603
2307	4822 122 33741	10pF 10% 50V
2308	4822 122 33741	10pF 10% 50V
2311	4822 124 40196	220µF 20% 16V
2312	4822 126 14305	100nF 10% 16V 0603
2313	4822 126 13694	68pF 1% 63V
2315	4822 122 33808	10nF 20% 50V
2321	4822 126 14509	470pF 10% 50V 0603
2322	4822 126 14509	470pF 10% 50V 0603
2323	5322 121 42386	100nF 5% 63V
2331	5322 126 11583	10nF 10% 50V 0603
2340	4822 126 14509	470pF 10% 50V 0603
2343	5322 122 32448	10pF 5% 63V CASE
2344	4822 126 14305	100nF 10% 16V 0603
2351	4822 126 13849	220nF 10% 16V
2403	4822 126 14305	100nF 10% 16V 0603
2404	4822 126 14305	100nF 10% 16V 0603
2405	4822 126 14305	100nF 10% 16V 0603
2406	4822 126 14305	100nF 10% 16V 0603
2407	4822 126 14305	100nF 10% 16V 0603
2408	4822 126 14305	100nF 10% 16V 0603
2414	4822 051 30008	0R00 JUMPER
2415	4822 051 30008	0R00 JUMPER
2416	4822 051 30008	0R00 JUMPER
2417	4822 126 14305	100nF 10% 16V 0603
2418	4822 124 40769	4.7µF 20% 100V
2419	4822 122 33809	22nF 20% 50V
2422	4822 124 41576	2.2µF 20% 50V
2423	4822 124 40242	1µF 20% 63V
2425	4822 122 33761	22pF 5% 50V
2428	4822 126 13956	68pF 5% 63V CASE 0603
2429	4822 126 13956	68pF 5% 63V CASE 0603
2430	5322 122 32269	6.8pF 5% 50V
2501	4822 126 14305	100nF 10% 16V 0603
2502	4822 126 14305	100nF 10% 16V 0603
2503	4822 126 14305	100nF 10% 16V 0603
2504	4822 126 14305	100nF 10% 16V 0603
2505	4822 126 14305	100nF 10% 16V 0603
2506	4822 126 14305	100nF 10% 16V 0603
2507	4822 126 14305	100nF 10% 16V 0603
2508	4822 126 14305	100nF 10% 16V 0603
2509	4822 126 14305	100nF 10% 16V 0603
2510	4822 126 14305	100nF 10% 16V 0603
2511	4822 126 14305	100nF 10% 16V 0603
2512	4822 126 14305	100nF 10% 16V 0603
2520	4822 126 14305	100nF 10% 16V 0603
2521	4822 126 14305	100nF 10% 16V 0603
2522	5322 126 11579	3.3nF 10% 63V
2525	4822 126 14507	18pF 5% 50V 0603
2528	4822 122 33752	15pF 5% 50V
2532	4822 126 13836	CER.ACITOR 16V 1µΦ
2534	5322 126 10223	4.7nF 10% 63V
2536	4822 126 13196	100nF 10% 25V
2537	4822 126 13196	100nF 10% 25V
2538	4822 124 40433	47µF 20% 25V
2539	4822 126 14305	100nF 10% 16V 0603
2540	4822 124 40433	47µF 20% 25V
2541	5322 122 32654	22nF 10% 63V
2545	4822 126 14305	100nF 10% 16V 0603
2550	4822 126 14305	100nF 10% 16V 0603
2551	5322 122 32448	10pF 5% 63V CASE
2552	5322 122 32269	6.8pF 5% 50V
2553	4822 126 10002	100nF 20% 25V
2554	4822 126 10002	100nF 20% 25V
2555	4822 126 14305	100nF 10% 16V 0603
2556	4822 126 14305	100nF 10% 16V 0603
2557	4822 126 14305	100nF 10% 16V 0603
2558	4822 126 14305	100nF 10% 16V 0603
2559	4822 124 81029	100µF 20% 25V
2560	4822 126 14305	100nF 10% 16V 0603
2561	4822 124 81286	47µF 20% 16V
2562	4822 126 14305	100nF 10% 16V 0603
2563	4822 124 81286	47µF 20% 16V
2565	4822 122 33753	150pF 5% 50V
2566	4822 122 33785	68pF 5% 50V
2567	5322 126 10184	820P 5% 50V 3
2568	4822 126 11759	100pF 50V
2601	4822 126 14305	100nF 10% 16V 0603
2602	4822 124 81151	22µF 50V
2603	4822 126 13196	100nF 10% 25V
2604	4822 124 41584	100µF 20% 10V
2605	4822 126 13196	100nF 10% 25V
2606	4822 124 22263	220µF 20% 25V
2607	4822 126 13196	100nF 10% 25V
2608	4822 124 81151	22µF 50V
2609	4822 126 13196	100nF 10% 25V
2610	4822 124 81151	22µF 50V
2611	4822 126 14305	100nF 10% 16V 0603
2612	4822 124 41579	10µF 20% 50V
2613	4822 126 13196	100nF 10% 25V
2615	4822 126 13692	47pF 1% 63V
2616	4822 126 13692	47pF 1% 63V
2617	4822 126 14218	3.9pF 50V
2618	4822 126 11669	27pF
2619	4822 126 13882	12pF 5% 50V
2620	4822 126 14218	3.9pF 50V
2621	4822 126 11669	27pF
2623	4822 126 13882	12pF 5% 50V
2624	4822 126 14218	3.9pF 50V
2625	4822 126 11669	27pF
2626	4822 126 13882	12pF 5% 50V
2627	4822 126 11759	100pF 50V
2628	4822 126 13196	100nF 10% 25V
2629	4822 126 14225	56pF 5% 50V 0603
2630	4822 126 14494	22nF 10% 25V 0603
2631	4822 126 11759	100pF 50V
2632	4822 126 14507	18pF 5% 50V 0603
2633	4822 126 14494	22nF 10% 25V 0603
2634	4822 122 33752	15pF 5% 50V
2635	4822 122 33777	47pF 5% 63V
2636	4822 126 14508	180pF 5% 50V 0603
2637	4822 126 14507	18pF 5% 50V 0603
2638	4822 126 14494	22nF 10% 25V 0603
2639	4822 122 33752	15pF 5% 50V
2640	4822 122 33777	47pF 5% 63V
2641	4822 126 14508	180pF 5% 50V 0603
2642	4822 126 14507	18pF 5% 50V 0603
2643	4822 126 14494	22nF 10% 25V 0603
2644	4822 122 33752	15pF 5% 50V
2645	4822 122 33777	47pF 5% 63V
2646	4822 126 14508	180pF 5% 50V 0603
2647	4822 126 14507	18pF 5% 50V 0603
2648	4822 126 14507	18pF 5% 50V 0603
2649	5322 122 32531	100pF 5% 50V
2650	5322 122 32531	100pF 5% 50V
2651	4822 124 12095	100µF 20% 16V
2652	4822 126 13196	100nF 10% 25V
2655	4822 126 14305	100nF 10% 16V 0603
2656	4822 126 14305	100nF 10% 16V 0603
2657	4822 124 41579	10µF 20% 50V
2658	4822 126 13196	100nF 10% 25V
2659	4822 126 13196	100nF 10% 25V
2660	4822 126 13196	100nF 10% 25V
2661	4822 126 13196	100nF 10% 25V
2662	4822 126 13196	100nF 10% 25V
2663	4822 126 13196	100nF 10% 25V
2664	4822 126 13196	100nF 10% 25V
2665	4822 126 13196	100nF 10% 25V
2666	4822 126 13196	100nF 10% 25V
2667	4822 126 13196	100nF 10% 25V

2670	4822 126 13196	100nF 10% 25V
2751	4822 122 33761	22pF 5% 50V
2752	4822 126 13692	47pF 1% 63V
2753	4822 122 32927	220nF 20% 50V
2754	5322 122 32268	470pF 10% 50V
2755	5322 122 32268	470pF 10% 50V
2756	5322 122 32268	470pF 10% 50V
2757	5322 122 32268	470pF 10% 50V
2758	5322 122 32268	470pF 10% 50V
2759	5322 122 32268	470pF 10% 50V
2760	5322 122 32268	470pF 10% 50V
2761	4822 122 32927	220nF 20% 50V
2762	4822 122 32927	220nF 20% 50V
2763	5322 122 32268	470pF 10% 50V
2764	5322 122 32268	470pF 10% 50V
2765	4822 124 12095	100µF 20% 16V
2766	4822 124 12095	100µF 20% 16V
2767	5322 122 32286	3.3pF 5% 50V
2768	5322 122 32286	3.3pF 5% 50V
2769	4822 126 13482	470nF 80/20% 16V
2770	5322 126 11583	10nF 10% 50V 0603
2771	4822 122 33177	10nF 20% 50V
2772	4822 122 33761	22pF 5% 50V
2773	5322 122 34123	1nF 10% 50V
2774	5322 122 34123	1nF 10% 50V
2775	4822 126 13482	470nF 80/20% 16V
2776	4822 122 33761	22pF 5% 50V
2777	5322 124 41979	10µF 10% 16V
2778	5322 124 41979	10µF 10% 16V
2779	4822 126 10002	100nF 20% 25V
2780	5322 124 41979	10µF 10% 16V
2781	4822 126 10002	100nF 20% 25V
2782	5322 124 41979	10µF 10% 16V
2783	4822 126 13482	470nF 80/20% 16V
2784	4822 126 13482	470nF 80/20% 16V
2785	5322 122 34123	1nF 10% 50V
2786	5322 122 34123	1nF 10% 50V
2790	5322 122 32658	22pF 5% 50V
2791	5322 122 32658	22pF 5% 50V
2792	4822 122 33177	10nF 20% 50V
2793	4822 122 33177	10nF 20% 50V
2797	4822 122 33177	10nF 20% 50V
2798	4822 122 33177	10nF 20% 50V
2799	5322 122 32658	22pF 5% 50V
2800	5322 122 32658	22pF 5% 50V
2801	4822 122 33761	22pF 5% 50V
2802	4822 122 32927	220nF 20% 50V
2803	4822 122 32927	220nF 20% 50V
2804	4822 122 32927	220nF 20% 50V
2805	4822 122 32927	220nF 20% 50V
2806	4822 122 32927	220nF 20% 50V
2807	4822 122 32927	220nF 20% 50V
2808	4822 124 12095	100µF 20% 16V
2809	5322 126 10511	1nF 5% 50V
2810	4822 122 33175	2.2nF 20% 50V
2811	5322 126 10511	1nF 5% 50V
2813	5322 126 11583	10nF 10% 50V 0603
2814	5322 126 11583	10nF 10% 50V 0603
2815	5322 126 11583	10nF 10% 50V 0603
2816	4822 124 12095	100µF 20% 16V
2817	5322 126 11583	10nF 10% 50V 0603
2818	4822 124 12095	100µF 20% 16V
2819	4822 124 12095	100µF 20% 16V
2820	5322 126 11578	1nF 10% 50V 0603
2821	4822 122 33177	10nF 20% 50V
2822	5322 126 11578	1nF 10% 50V 0603
2823	4822 122 33177	10nF 20% 50V
2824	4822 124 12095	100µF 20% 16V
2825	4822 122 33177	10nF 20% 50V
2827	5322 126 11578	1nF 10% 50V 0603
2828	4822 122 33177	10nF 20% 50V
2829	5322 126 11578	1nF 10% 50V 0603
2830	4822 122 33177	10nF 20% 50V
2831	4822 124 12095	100µF 20% 16V
2836	4822 126 13692	47pF 1% 63V
2837	5322 126 11583	10nF 10% 50V 0603
2838	4822 122 33761	22pF 5% 50V
2839	5322 126 11583	10nF 10% 50V 0603
2840	5322 126 11583	10nF 10% 50V 0603
2841	4822 126 13482	470nF 80/20% 16V
2846	5322 124 41979	10µF 10% 16V
2847	5322 124 41979	10µF 10% 16V
2848	5322 124 41979	10µF 10% 16V
2849	5322 124 41979	10µF 10% 16V
2890	4822 126 13061	220nF 20% 25V
2891	4822 126 10002	100nF 20% 25V
2892	4822 126 13482	470nF 80/20% 16V

3001	4822 051 30621	620Ω 5% 0.062W
3003	4822 117 13521	470Ω 5% RESN 0.63W
3004	4822 117 13521	470Ω 5% RESN 0.63W
3005	4822 117 13521	470Ω 5% RESN 0.63W
3006	4822 051 30103	10k 5% 0.062W
3007	4822 051 30103	10k 5% 0.062W
3009	4822 117 13521	470Ω 5% RESN 0.63W
3010	4822 051 30103	10k 5% 0.062W
3011	4822 051 30472	4k7 5% 0.062W
3013	4822 051 30102	1k 5% 0.062W
3014	4822 051 30473	47k 5% 0.062W
3015	4822 051 30473	47k 5% 0.062W
3016	4822 051 30102	1k 5% 0.062W
3017	4822 051 30102	1k 5% 0.062W
3018	4822 051 30221	220Ω 5% 0.062W
3019	4822 051 30681	680Ω 5% 0.062W
3020	4822 051 30221	220Ω 5% 0.062W
3021	4822 051 30221	220Ω 5% 0.062W
3022	4822 051 10102	1k 2% 0.25W
3023	4822 117 13521	470Ω 5% RESN 0.63W
3024	4822 051 30471	470Ω 5% 0.062W
3027	4822 117 13521	470Ω 5% RESN 0.63W
3028	4822 117 13521	470Ω 5% RESN 0.63W
3029	4822 051 30471	470Ω 5% 0.062W
3030	4822 117 13522	100Ω 5% RESN 0.63W
3031	4822 051 20331	330Ω 5% 0.1W
3032	4822 051 30471	470Ω 5% 0.062W
3033	4822 117 13523	220Ω 5% RESN 0.63W
3034	4822 051 30103	10k 5% 0.062W
3035	4822 051 30103	10k 5% 0.062W
3036	4822 117 13524	2.2k 5% RESN 0.63W
3039	4822 051 30333	33k 5% 0.062W
3041	4822 117 10833	10k 1% 0.1W
3042	4822 051 20474	470k 5% 0.1W
3043	4822 051 30472	4k7 5% 0.062W
3047	4822 117 13525	24k 1% 0.62W RC22H 0603
3048	4822 117 13526	150Ω 5% RESN 0.63W
3059	4822 051 30681	680Ω 5% 0.062W
3062	4822 051 30473	47k 5% 0.062W
3063	4822 051 30472	4k7 5% 0.062W
3066	4822 117 10833	10k 1% 0.1W
3067	4822 051 30472	4k7 5% 0.062W
3068	4822 051 30103	10k 5% 0.062W
3069	4822 051 30689	68Ω 5% 0.063W 0603 RC21 RST SM
3070	4822 051 30103	10k 5% 0.062W
3071	4822 051 30472	4k7 5% 0.062W
3072	4822 117 10834	47k 1% 0.1W
3073▲	4822 051 20472	4k7 5% 0.1W
3075	4822 051 30472	4k7 5% 0.062W
3076	4822 051 30472	4k7 5% 0.062W
3077	4822 051 30102	1k 5% 0.062W
3078	4822 051 30102	1k 5% 0.062W
3102	4822 117 10833	10k 1% 0.1W
3103▲	4822 051 20101	100Ω 5% 0.1W
3104▲	4822 051 20101	100Ω 5% 0.1W
3106	4822 051 20479	47Ω 5% 0.1W
3110	4822 117 11449	2k2 1% 0.1W
3111	4822 117 11449	2k2 1% 0.1W
3112▲	4822 051 20472	4k7 5% 0.1W
3114▲	4822 051 20472	4k7 5% 0.1W
3118	4822 051 20391	390Ω 5% 0.1W
3119	4822 051 20479	47Ω 5% 0.1W
3124	4822 051 30101	100Ω 5% 0.062W
3133	4822 117 12955	2k7 1% 0.1W 0805
3135▲	4822 051 20472	4k7 5% 0.1W
3136	4822 117 11503	220Ω 1% 0.1W
3137	4822 051 10102	1k 2% 0.25W
3138	4822 117 11504	270Ω 1% 0.1W
3139	4822 117 11139	1k5 1% 0.1W
3140▲	4822 051 20153	15k 5% 0.1W
3141	4822 051 30333	33k 5% 0.062W
3142	4822 051 30102	1k 5% 0.062W
3143	4822 051 30102	1k 5% 0.062W
3145	4822 051 30101	100Ω 5% 0.062W
3146	4822 051 20223	22k 5% 0.1W
3147	4822 051 20223	22k 5% 0.1W
3148	4822 117 11449	2k2 1% 0.1W
3149	4822 117 10965	18k 1% 0.1W
3200	4822 117 13579	220k 1% 0.1W RC12H 0805
3201	4822 117 13579	220k 1% 0.1W RC12H 0805
3202	4822 117 10353	150Ω 1% 0.1W
3203	4822 117 10353	150Ω 1% 0.1W
3204▲	4822 052 10688	6Ω8 5% 0.33W
3205▲	4822 051 20471	470Ω 5% 0.1W
3206	4822 117 12521	68Ω 1% 0.1W
3207	4822 051 20561	560Ω 5% 0.1W
3208	4822 051 20399	39Ω 5% 0.1W

3209	4822 051 20759	75Ω 5% 0.1W
3210	4822 051 20759	75Ω 5% 0.1W
3211	4822 051 20759	75Ω 5% 0.1W
3212	4822 051 20399	39Ω 5% 0.1W
3213	4822 051 20759	75Ω 5% 0.1W
3215	4822 051 20759	75Ω 5% 0.1W
3216	4822 051 20822	8k2 5% 0.1W
3218	4822 051 20392	3k9 5% 0.1W
3219	4822 051 10102	1k 2% 0.25W
3220	4822 051 10102	1k 2% 0.25W
3221	4822 117 13579	220k 1% 0.1W RC12H 0805
3222	4822 117 13579	220k 1% 0.1W RC12H 0805
3223	4822 117 10353	150Ω 1% 0.1W
3224	4822 117 10353	150Ω 1% 0.1W
3225▲	4822 052 10688	6Ω8 5% 0.33W
3228	4822 051 30101	100Ω 5% 0.062W
3229	4822 051 30103	10k 5% 0.062W
3230	4822 051 20561	560Ω 5% 0.1W
3232	4822 117 12521	68Ω 1% 0.1W
3233	4822 117 10353	150Ω 1% 0.1W
3235	4822 051 20759	75Ω 5% 0.1W
3236	4822 051 20759	75Ω 5% 0.1W
3240	4822 051 20759	75Ω 5% 0.1W
3241	4822 117 10353	150Ω 1% 0.1W
3242	4822 051 20822	8k2 5% 0.1W
3243	4822 117 10353	150Ω 1% 0.1W
3244	4822 051 10102	1k 2% 0.25W
3245	4822 051 20392	3k9 5% 0.1W
3246	4822 051 10102	1k 2% 0.25W
3248	4822 051 20331	330Ω 5% 0.1W
3249	4822 117 12955	2k7 1% 0.1W 0805
3250▲	4822 051 20101	100Ω 5% 0.1W
3252▲	4822 051 20339	33Ω 5% 0.1W
3253	4822 051 20391	390Ω 5% 0.1W
3254	4822 051 10102	1k 2% 0.25W
3255	4822 051 10102	1k 2% 0.25W
3256	4822 051 20759	75Ω 5% 0.1W
3257	4822 117 10353	150Ω 1% 0.1W
3258	4822 117 10353	150Ω 1% 0.1W
3259	4822 051 30273	27k 5% 0.062W
3262	4822 051 30473	47k 5% 0.062W
3263	4822 051 30221	220Ω 5% 0.062W
3264	4822 051 20822	8k2 5% 0.1W
3265	4822 117 12955	2k7 1% 0.1W 0805
3266	4822 117 10833	10k 1% 0.1W
3280	4822 117 10353	150Ω 1% 0.1W
3300▲	4822 052 10688	6Ω8 5% 0.33W
3302	4822 051 30101	100Ω 5% 0.062W
3303	4822 051 30101	100Ω 5% 0.062W
3304	4822 051 30101	100Ω 5% 0.062W
3307	4822 051 30102	1k 5% 0.062W
3308	4822 051 30102	1k 5% 0.062W
3309	4822 051 30104	100k 5% 0.062W
3310▲	4822 051 20332	3k3 5% 0.1W
3311	4822 051 30102	1k 5% 0.062W
3315	4822 051 20182	1k8 5% 0.1W
3316	4822 051 10102	1k 2% 0.25W
3317	4822 051 30102	1k 5% 0.062W
3318	4822 051 30102	1k 5% 0.062W
3320	4822 051 30102	1k 5% 0.062W
3321	4822 051 30102	1k 5% 0.062W
3322	4822 051 30102	1k 5% 0.062W
3323	4822 051 20393	39k 5% 0.1W
3325	4822 051 30102	1k 5% 0.062W
3326	4822 051 30221	220Ω 5% 0.062W
3330	4822 051 30684	680k 5% 0.062W
3331	4822 051 30473	47k 5% 0.062W
3332	4822 051 30183	18k 5% 0.062W
3340	4822 051 30123	12k 5% 0.062W
3341	4822 051 10102	1k 2% 0.25W
3342	4822 051 30103	10k 5% 0.062W
3343	4822 051 20104	100k 5% 0.1W
3344	4822 051 30103	10k 5% 0.062W
3350	4822 051 30474	470k 5% 0.062W
3351	4822 051 30224	220k 5% 0.062W
3352	4822 051 30332	3k3 5% 0.062W
3353	4822 051 30182	1k8 5% 0.062W
3369	4822 051 30103	10k 5% 0.062W
3370	4822 051 30103	10k 5% 0.062W
3400	4822 117 11454	820Ω 1% 0.1W
3401	4822 117 11454	820Ω 1% 0.1W
3402	4822 117 11454	820Ω 1% 0.1W
3404	4822 051 20479	47Ω 5% 0.1W
3405	4822 051 20479	47Ω 5% 0.1W
3406	4822 051 20479	47Ω 5% 0.1W
3407	4822 051 20681	680Ω 5% 0.1W
3408	4822 051 20681	680Ω 5% 0.1W
3409	4822 051 20681	680Ω 5% 0.1W
3420	4822 051 30473	47k 5% 0.062W
3422	4822 117 11449	2k2 1% 0.1W
3423	4822 117 11449	2k2 1% 0.1W

3425	4822 051 30155	1M5 5% 0.062W
3426	4822 051 30333	33k 5% 0.062W
3427	4822 051 30154	150k 5% 0.062W
3428	4822 051 30222	2k2 5% 0.062W
3429	4822 117 12968	820Ω 5% 0.62W
3430	4822 051 30181	180Ω 5% 0.062W
3431	4822 051 30472	4k7 5% 0.062W
3432	4822 051 30101	100Ω 5% 0.062W
3433	4822 051 30101	100Ω 5% 0.062W
3434▲	4822 052 10478	4Ω7 5% 0.33W
3436▲	4822 051 20008	0Ω jumper . (0805)
3439	4822 117 10833	10k 1% 0.1W
3440	4822 051 20333	33k 5% 0.1W
3441	4822 051 20223	22k 5% 0.1W
3442	4822 117 10833	10k 1% 0.1W
3443	4822 051 20223	22k 5% 0.1W
3521	4822 051 30104	100k 5% 0.062W
3529	4822 117 13522	100Ω 5% RESN 0.63W
3530	4822 051 30101	100Ω 5% 0.062W
3531	4822 051 30101	100Ω 5% 0.062W
3532▲	4822 051 20153	15k 5% 0.1W
3538▲	4822 052 10478	4Ω7 5% 0.33W
3545	4822 051 30471	470Ω 5% 0.062W
3546	4822 051 30471	470Ω 5% 0.062W
3551	4822 051 30271	270Ω 5% 0.062W
3553	4822 117 10353	150Ω 1% 0.1W
3554	4822 051 10102	1k 2% 0.25W
3556	4822 117 10833	10k 1% 0.1W
3557	4822 051 30479	47Ω 5% 0.062W
3565	4822 051 30101	100Ω 5% 0.062W
3566	4822 051 30101	100Ω 5% 0.062W
3567▲	4822 051 20101	100Ω 5% 0.1W
3568▲	4822 051 20471	470Ω 5% 0.1W
3569	4822 051 30479	47Ω 5% 0.062W
3570	4822 117 13522	100Ω 5% RESN 0.63W
3573▲	4822 051 20109	10Ω 5% 0.1W
3574▲	4822 051 20008	0Ω jumper . (0805)
3602	4822 117 12139	22Ω 5% 0.062W
3603	4822 051 30101	100Ω 5% 0.062W
3605	4822 051 30101	100Ω 5% 0.062W
3606	4822 051 30109	10Ω 5% 0.062W
3607	4822 051 30392	3k9 5% 0.063W 0603
3608	4822 051 30272	2k7 5% 0.062W
3609▲	4822 117 12917	1Ω 5% 0.062W case0603
3610	4822 051 30391	390Ω 5% 0.062W
3611	4822 051 30102	1k 5% 0.062W
3612	4822 051 30391	390Ω 5% 0.062W
3613	4822 051 30391	390Ω 5% 0.062W
3614	4822 051 30479	47Ω 5% 0.062W
3615	4822 051 30471	470Ω 5% 0.062W
3616	4822 051 30472	4k7 5% 0.062W
3617	4822 051 30472	4k7 5% 0.062W
3618	4822 051 30221	220Ω 5% 0.062W
3619	4822 051 30472	4k7 5% 0.062W
3620	4822 051 30472	4k7 5% 0.062W
3621	4822 051 30101	100Ω 5% 0.062W
3623	4822 051 30101	100Ω 5% 0.062W
3625	4822 051 30105	1M 5% 0.062W
3626	4822 051 30101	100Ω 5% 0.062W
3628	4822 051 30101	100Ω 5% 0.062W
3629	4822 051 30332	3k3 5% 0.062W
3630▲	4822 051 20101	100Ω 5% 0.1W
3631▲	4822 051 20101	100Ω 5% 0.1W
3632	4822 051 10102	1k 2% 0.25W
3633	4822 051 30101	100Ω 5% 0.062W
3634	4822 051 30332	3k3 5% 0.062W
3635	4822 051 20681	680Ω 5% 0.1W
3636	4822 051 20681	680Ω 5% 0.1W
3637	4822 051 20681	680Ω 5% 0.1W
3639	4822 051 30101	100Ω 5% 0.062W
3640▲	4822 117 12917	1Ω 5% 0.062W case0603
3641	4822 051 30102	1k 5% 0.062W
3644	4822 051 30102	1k 5% 0.062W
3645	4822 051 30102	1k 5% 0.062W
3646▲	4822 051 20472	4k7 5% 0.1W
3647	4822 051 30689	68Ω 5% 0.063W 0603 RC21 RST SM
3648	4822 051 30689	68Ω 5% 0.063W 0603 RC21 RST SM
3649	4822 051 30689	68Ω 5% 0.063W 0603 RC21 RST SM
3650	4822 051 30121	120Ω 5% 0.062W
3651	4822 051 30121	120Ω 5% 0.062W
3652	4822 051 30121	120Ω 5% 0.062W
3653	4822 051 30689	68Ω 5% 0.063W 0603 RC21 RST SM
3654	4822 051 30689	68Ω 5% 0.063W 0603 RC21 RST SM
3655	4822 051 30101	100Ω 5% 0.062W
3657	4822 051 30101	100Ω 5% 0.062W
3659	4822 051 30101	100Ω 5% 0.062W
3751	4822 051 30223	22k 5% 0.062W
3752	4822 051 30223	22k 5% 0.062W
3753	4822 051 30682	6k8 5% 0.062W
3754	4822 051 30682	6k8 5% 0.062W
3755	4822 051 30101	100Ω 5% 0.062W
3756	4822 051 30101	100Ω 5% 0.062W
3758	4822 051 30473	47k 5% 0.062W
3760	4822 051 30473	47k 5% 0.062W
3761	4822 051 30682	6k8 5% 0.062W
3762▲	4822 051 20472	4k7 5% 0.1W
3765	4822 051 20683	68k 5% 0.1W
3766	4822 117 10833	10k 1% 0.1W
3767	4822 051 20683	68k 5% 0.1W
3768	4822 117 10833	10k 1% 0.1W
3769▲	4822 051 20332	3k3 5% 0.1W
3770▲	4822 051 20332	3k3 5% 0.1W
3771	4822 117 11507	6k8 1% 0.1W
3772	4822 117 11507	6k8 1% 0.1W
3773▲	4822 051 20472	4k7 5% 0.1W
3776	4822 051 20562	5k6 5% 0.1W 0805
3777	4822 117 10833	10k 1% 0.1W
3778	4822 051 20562	5k6 5% 0.1W 0805
3779	4822 117 10833	10k 1% 0.1W
3780	4822 051 30682	6k8 5% 0.062W
3781	4822 051 30561	560Ω 5% 0.062W
3782▲	4822 051 20101	100Ω 5% 0.1W
3783▲	4822 051 20101	100Ω 5% 0.1W
3784	4822 051 30682	6k8 5% 0.062W
3785	4822 051 30682	6k8 5% 0.062W
3786	4822 051 30223	22k 5% 0.062W
3787	4822 051 30223	22k 5% 0.062W
3788	4822 051 30682	6k8 5% 0.062W
3789	4822 051 30682	6k8 5% 0.062W
3790	4822 051 30223	22k 5% 0.062W
3791	4822 051 30223	22k 5% 0.062W
3792	4822 051 30682	6k8 5% 0.062W
3793	4822 051 30682	6k8 5% 0.062W
3794	4822 051 30223	22k 5% 0.062W
3795	4822 051 30223	22k 5% 0.062W
3796▲	4822 051 20121	120Ω 5% 0.1W
3797▲	4822 051 20121	120Ω 5% 0.1W
3798	4822 051 20223	22k 5% 0.1W
3799	4822 051 30223	22k 5% 0.062W
3811	4822 051 30101	100Ω 5% 0.062W
3812	4822 051 30101	100Ω 5% 0.062W
3813	4822 051 30101	100Ω 5% 0.062W
3814	4822 051 30101	100Ω 5% 0.062W
3817	4822 051 20104	100k 5% 0.1W
3818	4822 051 30101	100Ω 5% 0.062W
3819	4822 051 30101	100Ω 5% 0.062W
3821	4822 051 30682	6k8 5% 0.062W
3822	4822 051 30683	68k 5% 0.062W
3823▲	4822 051 20472	4k7 5% 0.1W
3824▲	4822 051 20101	100Ω 5% 0.1W
3830▲	4822 051 20121	120Ω 5% 0.1W
3831▲	4822 051 20121	120Ω 5% 0.1W
3832	4822 051 10102	1k 2% 0.25W
3833	4822 051 30103	10k 5% 0.062W
3837	4822 051 30101	100Ω 5% 0.062W
3838	4822 051 30101	100Ω 5% 0.062W
3839	4822 051 30101	100Ω 5% 0.062W
3840	4822 051 30103	10k 5% 0.062W
3841	4822 051 30101	100Ω 5% 0.062W
3842	4822 051 30473	47k 5% 0.062W
3844	4822 051 30473	47k 5% 0.062W
3845	4822 051 30473	47k 5% 0.062W
3846	4822 051 30473	47k 5% 0.062W
3847	4822 051 30473	47k 5% 0.062W
3890	4822 117 12955	2k7 1% 0.1W 0805
3891	4822 051 10102	1k 2% 0.25W
3892	4822 117 12955	2k7 1% 0.1W 0805
3893	4822 051 10102	1k 2% 0.25W
3894	4822 117 13579	220k 1% 0.1W RC12H 0805
3895	4822 051 30103	10k 5% 0.062W
3897	4822 051 30472	4k7 5% 0.062W
3898	4822 051 30101	100Ω 5% 0.062W
4xxx	4822 051 10008	0Ω 5% 0.25W (1206)
4xxx	4822 051 20008	0Ω 5% 0.25W (0805)

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5001	4822 157 11828	22U 20% SM 0805
5002	4822 157 11775	6.8µH 5% 5X3
5101	4822 157 11775	6.8µH 5% 5X3
5102	4822 157 71303	MLF2012DR39KT
5103	4822 157 11776	VAR. 7MM 40.4mH z
5106	4822 157 10977	4.7µH 10%
5108	4822 157 11534	IND VAR 7MM 78mH z
5301	4822 157 11876	6.8µH 10% 0805
5302	4822 157 11876	6.8µH 10% 0805
5305	4822 157 11778	IND FIX SM 0805 5U6 10%
5306	4822 157 11778	IND FIX SM 0805 5U6 10%
5307	4822 157 11778	IND FIX SM 0805 5U6 10%
5501	4822 157 11775	6.8µH 5% 5X3
5502	4822 157 11775	6.8µH 5% 5X3
5540	4822 157 71304	1µH
5553	4822 157 11855	68µH 10% 0805
5559	4822 157 11775	6.8µH 5% 5X3
5560	4822 157 11876	6.8µH 10% 0805
5562	4822 157 11775	6.8µH 5% 5X3
5601	4822 157 11775	6.8µH 5% 5X3
5602	4822 157 11779	BLM11P300SPT1
5603	4822 157 70503	4.7µH
5604	4822 157 11775	6.8µH 5% 5X3
5605	4822 157 11779	BLM11P300SPT1
5606	4822 157 11775	6.8µH 5% 5X3
5608	4822 157 11778	IND FIX SM 0805 5U6 10%
5609	4822 157 11778	IND FIX SM 0805 5U6 10%
5610	4822 157 11778	IND FIX SM 0805 5U6 10%
5611	4822 157 11781	BLM11A601SPT1
5613	4822 157 11781	BLM11A601SPT1
5615	4822 157 11778	IND FIX SM 0805 5U6 10%
5616	4822 157 11778	IND FIX SM 0805 5U6 10%
5617	4822 157 11778	IND FIX SM 0805 5U6 10%
5620	4822 157 11775	6.8µH 5% 5X3
5621	4822 157 11782	IND FIX SM 0805 100µH 10%
5751	4822 157 11775	6.8µH 5% 5X3
5752	4822 157 11775	6.8µH 5% 5X3
5753	4822 157 11775	6.8µH 5% 5X3
5754	4822 157 11876	6.8µH 10% 0805
5755	4822 157 11876	6.8µH 10% 0805
5756	4822 157 11775	6.8µH 5% 5X3

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6001	4822 130 11422	PLVA2650A
6002	4822 130 11422	PLVA2650A
6003	4822 130 11422	PLVA2650A
6004	4822 130 11422	PLVA2650A
6006	4822 130 11422	PLVA2650A
6008	4822 130 11422	PLVA2650A
6009	4822 130 11422	PLVA2650A
6012	4822 130 11422	PLVA2650A
6013	4822 130 11422	PLVA2650A
6017	4822 130 11422	PLVA2650A
6019	4822 130 11422	PLVA2650A
6021	4822 130 11422	PLVA2650A
6023	4822 130 11422	PLVA2650A
6025	4822 130 11423	PLVA2656A
6026	4822 130 11423	PLVA2656A
6037	4822 130 11366	BZX284-C3V9
6101	4822 130 11027	BZX284-C33
6103	4822 130 10414	BA792
6104	4822 130 10414	BA792
6106	4822 130 11397	BAS316
6107	4822 130 11397	BAS316
6200	4822 130 11413	PDZ10B
6201	4822 130 11413	PDZ10B
6202	4822 130 11413	PDZ10B
6203	4822 130 11413	PDZ10B
6204	4822 130 11416	PDZ6.8B
6205	4822 130 11413	PDZ10B
6206	4822 130 11413	PDZ10B
6207	4822 130 11416	PDZ6.8B
6208	4822 130 11413	PDZ10B
6209	4822 130 11413	PDZ10B
6210	4822 130 11416	PDZ6.8B
6211	4822 130 11416	PDZ6.8B
6212	4822 130 11416	PDZ6.8B
6213	4822 130 11416	PDZ6.8B
6214	4822 130 11413	PDZ10B
6215	4822 130 11413	PDZ10B
6216	4822 130 11413	PDZ10B
6217	4822 130 11413	PDZ10B
6218	4822 130 11031	BZX284-C12
6219	4822 130 11416	PDZ6.8B
6220	4822 130 11413	PDZ10B
6221	4822 130 11413	PDZ10B
6222	4822 130 11416	PDZ6.8B
6223	4822 130 11413	PDZ10B
6224	4822 130 11413	PDZ10B
6225	4822 130 11416	PDZ6.8B
6226	4822 130 11416	PDZ6.8B
6227	4822 130 11416	PDZ6.8B
6228	4822 130 11416	PDZ6.8B
6229	4822 130 11413	PDZ10B
6230	4822 130 11413	PDZ10B
6231	4822 130 11413	PDZ10B
6232	4822 130 11413	PDZ10B
6233	4822 130 11416	PDZ6.8B

6234	4822 130 11413	PDZ10B
6235	4822 130 11413	PDZ10B
6236	4822 130 11413	PDZ10B
6237	4822 130 11413	PDZ10B
6238	4822 130 10654	BAT254
6250	4822 130 10654	BAT254
6260	4822 130 11413	PDZ10B
6261	4822 130 11413	PDZ10B
6340	4822 130 11397	BAS316
6341	4822 130 11594	BZX284-C47
6344	4822 130 11397	BAS316
6350	4822 130 11414	BZX284-C27
6420	4822 130 10648	BZX284-C5V6
6422	4822 130 11397	BAS316
6424	4822 130 11397	BAS316
6429	4822 130 10648	BZX284-C5V6
6430	4822 130 11397	BAS316
6431	4822 130 11397	BAS316
6432	4822 130 83757	BAS216
6751	4822 130 11413	PDZ10B
6752	4822 130 11413	PDZ10B
6753	4822 130 11413	PDZ10B
6754	4822 130 11413	PDZ10B
6755	4822 130 11413	PDZ10B
6756	4822 130 11413	PDZ10B
6757	4822 130 11397	BAS316

7001	4822 209 16974	MSM54V16258B-45JS
7002	4822 900 11326	Main software
7003	4822 209 16976	SAA5800H/11
7004	4822 130 60511	BC847B
7005	5322 130 60508	BC857B
7006	5322 130 60508	BC857B
7007	4822 130 60511	BC847B
7008	4822 209 16977	M24C32-WBN6
7009	4822 209 16978	LF33CV
7010▲	4822 209 73852	PMBT2369
7011	4822 130 11155	PDTC114ET
7012	5322 130 60508	BC857B
7013	4822 209 17308	M29W400T-100M1
7014	4822 130 60511	BC847B
7015	5322 130 60508	BC857B
7016	4822 130 60511	BC847B
7017▲	4822 209 73852	PMBT2369
7018▲	4822 209 73852	PMBT2369
7103	4822 130 60511	BC847B
7104	4822 130 60511	BC847B
7107	5322 130 60508	BC857B
7111	4822 130 60511	BC847B
7162	4822 130 60511	BC847B
7163	4822 130 60511	BC847B
7200	4822 130 40959	BC547B
7201	4822 130 40959	BC547B
7203	4822 130 44568	BC557B
7204	4822 130 60511	BC847B
7205	4822 130 60511	BC847B
7216	4822 130 60511	BC847B
7300	4822 209 16979	TDA9330H/N1
7341	5322 130 60508	BC857B
7351	5322 130 60508	BC857B
7402	4822 209 17311	TDA9178T/N1
7418	5322 130 60508	BC857B
7419	5322 130 60508	BC857B
7420	5322 130 60508	BC857B
7424	5322 130 60508	BC857B
7438	4822 130 10255	MMUN2213
7501	4822 209 16981	TDA9320H/N1
7501	4822 209 17487	TDA9320AH/N1
7502	4822 130 60511	BC847B
7555	5322 130 60508	BC857B
7560	4822 209 12998	SAA4961/V3/S1
7561	4822 130 60511	BC847B
7601	5322 130 60508	BC857B
7602	4822 130 60511	BC847B
7603	5322 130 60508	BC857B
7604▲	4822 209 73852	PMBT2369
7605▲	4822 209 73852	PMBT2369
7608	4822 209 90034	SAA4990H/V0
7609	4822 209 16983	SAA4978H/V1
7610	5322 130 60508	BC857B
7611	5322 130 60508	BC857B
7612	5322 130 60508	BC857B
7613	4822 209 15882	MC33269D
7614	4822 209 17307	MSM54V12222A-30JS
7615	4822 209 17307	MSM54V12222A-30JS
7616	4822 900 11327	FBX software
7750	4822 209 16978	LF33CV
7751	4822 209 16803	MSP3410D-PS-B4
7752	5322 209 11102	HEF4052BT
7753	5322 209 11102	HEF4052BT
7756	4822 209 30095	LM833D
7757	4822 209 31378	NJM4556MB
7758	4822 209 30095	LM833D
7770	4822 209 17421	SAA7712H/N203
7772	4822 209 30095	LM833D
7774	4822 130 60511	BC847B
7775	5322 209 11102	HEF4052BT

Surround amplifier

Various

0300	4822 267 10981	CONN. 11P
0301	4822 267 10981	CONN. 11P
0303	4822 267 10967	CONN. 3P
0314	4822 267 10971	CONN. 5P

2000	4822 124 21443	2.2µF
2001	5322 121 42661	330nF 5% 63V
2002	4822 121 43897	1nF 5% 400V
2003	4822 121 43856	4.7nF 5% 250V
2004	4822 122 33216	270pF 5% 50V
2005	4822 126 13061	220nF 20% 25V
2006	4822 124 11583	2200µF 20% 35V
2007	5322 121 42386	100nF 5% 63V
2008	4822 121 43897	1nF 5% 400V
2009	5322 121 42386	100nF 5% 63V
2010	4822 121 51319	1µF 10% 63V
2011	4822 124 11583	2200µF 20% 35V
2012	4822 126 13061	220nF 20% 25V
2013	5322 121 42386	100nF 5% 63V
2014	4822 121 43897	1nF 5% 400V
2015	4822 126 13061	220nF 20% 25V
2016	4822 126 13061	220nF 20% 25V
2017	4822 121 51442	2.2nF 10% 50V

3000	4822 051 20104	100k 5% 0.1W
3001	4822 117 10833	10k 1% 0.1W
3002	4822 117 10834	47k 1% 0.1W
3003	4822 117 11383	12k 1% 0.1W
3004	4822 117 10353	150Ω 1% 0.1W
3005	4822 051 20104	100k 5% 0.1W
3006	4822 117 10833	10k 1% 0.1W
3007▲	4822 051 20472	4k7 5% 0.1W
3008	4822 117 10833	10k 1% 0.1W
3009	4822 117 10833	10k 1% 0.1W
3010	4822 051 10102	1k 2% 0.25W
3011	4822 117 10834	47k 1% 0.1W
4xxx	4822 051 10008	0Ω 5% 0.25W (1206)
4xxx	4822 051 20008	0Ω 5% 0.25W (0805)

5000	4822 157 10385	8RHB S 56U 10%
5001	4822 157 71453	27U 10%
5002	4822 157 71461	22µH 10%
5003	4822 157 71453	27U 10%
5004	4822 157 71453	27U 10%
5005	4822 157 11411	100mH z

6000	4822 130 83757	BAS216
6001	4822 130 11031	BZX284-C12
6002	4822 130 42488	BYD33D
6003	4822 130 42488	BYD33D

7000	4822 209 17417	TDA7480
7001	4822 130 60511	BC847B
7002	4822 130 60511	BC847B

Clickfit panel

Various

0201	4822 265 11579	4P YKD21-0153
0302	4822 267 10748	S3B-EH (3P)

2701	4822 121 41856	22nF 5% 250V
2702	4822 121 41856	22nF 5% 250V